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Part III

Environmental Protection Agency

OMB Response to Agency Paperwork Reduction Act Clearance Request; Notice

ENVIRONMENTAL PROTECTION AGENCY

[OPPTS-400054B; FRL-4069-8]

OMB Response to Agency Paperwork Reduction Act Clearance Request

AGENCY: Environmental Protection Agency (EPA).

ACTION: Approval of 1991 Form R and Instructions.

SUMMARY: The Office of Management and Budget (OMB) has approved the revised Form R and instructions which are to be used to comply with the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and section 6607 of the Pollution Prevention Act of 1990 (PPA) for the 1991 calendar (reporting) year.

DATES: The form and instructions were approved on May 19, 1992, and are effective through November 30, 1992.

FOR FURTHER INFORMATION CONTACT: The Emergency Planning and Community Right-to-Know Hotline, Environmental Protection Agency, Mail Stop OS-120, 401 M St., SW., Washington, DC 20460, Toll free: 800/535-0202.

SUPPLEMENTARY INFORMATION: EPA Information Collection Request (ICR) No. 1363.04; Toxic Release Inventory Reporting Form Pollution Prevention Information was approved May 19, 1992, under OMB No. 2070-0093 which expires November 30, 1992. This ICR covers modifications to the Toxic Chemical Release Inventory (TRI) reporting Form R to include additional reporting elements required by the Pollution Prevention Act of 1990 (42 U.S.C. 11071 to 11079).

The modifications require that facilities that must currently comply with the requirements of section 313 of EPCRA also provide quantities: released; used for energy recovery onsite and off-site; recycled on-site and off-site; treated on-site and off-site; and released due to remedial actions, catastrophic events, or one-time events not associated with production processes. Respondent facilities must also provide: a production ratio or activity index; information on source reduction activities and the methods used to identify the opportunity for those activities; and an indication if additional optional information is included with the Form R submission. The following table provides the previous burden on respondent facilities for complying with EPCRA section 313 and the new additional burden on those facilities for complying with the reporting modifications as required by the PPA.

Table 1.—Effect on Total Annual Burden

	Existing Form R	PPA Requirements	Combined Total
Number of Respondents	28,000	28,000	28,000
Responses per Respondent	4	4	4
Total Hours	3,728,908	1,214,772	4,943,680

Because of delays in finalizing and distributing the OMB-approved 1991 Form R and accompanying instructions, facilities subject to EPCRA and PPA reporting may not have sufficient time to prepare and submit their reports by July 1, 1992. EPA is aware that delay in the distribution of the reporting package is creating concern regarding potential enforcement actions, including civil penalties, for those facilities reporting after the July 1, 1992 deadline.

In recognition of legitimate concerns and the importance to the public that facilities submit complete and accurate Form R reports, EPA will not initiate enforcement proceedings against facilities that file accurate Form R reports between July 1, 1992 and September 1, 1992. Reports for the 1991 reporting year that are filed after September 1, 1992 and/or contain inaccurate or missing information, including errors or omissions, may be subject to EPA enforcement action, including, but not limited to, civil penalties.

This determination applies only to violations of the EPCRA section 313 and PPA section 6607 reporting obligations for Form R reports due on July 1, 1992, covering calendar year 1991. Nothing in this determination shall be construed to apply to any other EPCRA reporting obligations of facilities for Form R reports for past or future reporting years. This action does not represent an administrative suspension of the statutory deadline established by Congress. Rather, this decision recognizes the inability of the government to provide approved Form R reporting forms and the Administrator's discretion to determine the appropriate EPA enforcement response for violations of EPCRA section 313.

The form and instructions follow.

BILLING CODE 6560-50-F

Important Changes in the Section 313 Requirements for Reporting Year 1991

Reporting requirements for calendar year 1991 (reports due July 1, 1992) differ from previous years:

(1) The following chemicals have been specifically delisted and are not covered for the 1991 reporting year:

Chemical Name	CAS Number
Terephthalic acid	100-21-0
Melamine	108-78-1
*C.I. Pigment Blue 15	147-14-8
Sodium hydroxide (solution)	1310-73-2
*C.I. Pigment Green 7	1328-53-6
Aluminum oxide (non-fibrous forms)	1344-28-1
C.I. Acid Blue 9 diammonium salt	2650-18-2
C.I. Acid Blue 9 disodium salt	3844-45-9
Sodium sulfate (solution)	7757-82-6
Titanium dioxide	13463-67-7
*C.I. Pigment Green 36	14302-13-7

*These substances were delisted from the "Copper Compounds" category.

(2) The following chemicals have been added to the toxic chemical list and are covered for the 1991 reporting year:

Chemical Name	CAS Number
Bromotrifluoromethane (Halon 1301)	75-63-8
Trichlorofluoromethane (CFC-11)	75-69-4
Dichlorodifluoromethane (CFC-12)	75-71-8
Dichlorotetrafluoroethane (CFC-114)	76-14-2
Monochloropentafluoroethane (CFC-115)	76-15-3
Dibromotetrafluoroethane (Halon 2402)	124-73-2
Bromochlorodifluoromethane (Halon 1211)	353-59-3

(3) Reporting in Part II, Section 8, "Source Reduction and Recycling Activities," is now mandatory under the Pollution Prevention Act of 1990. All facilities required to file Form R are now required to report any source reduction and recycling activity engaged in during the reporting year. See the instructions for Part II, Section 8 for information about the new requirements.

(4) Toxic chemicals that are used for energy recovery purposes now have a separate reporting data element. If the reported toxic chemical is actually used for energy recovery and has a significant heat of combustion value, that activity will be reported as energy recovery. If the toxic chemical is incinerated with no recovery of energy, or if the heat of combustion value of the toxic chemical is too low to contribute significantly to energy recovery, the activity will be considered waste treatment.

(5) The de minimis exemption has been revised; beneficiation activities are no longer excluded from this exemption. Under any circumstances, toxic chemicals received in mixtures or trade name products under the de minimis value of one percent, or 0.1 percent if carcinogenic, are exempted from threshold determinations and release calculations.

Once a listed toxic chemical exceeds its de minimis level, however, all releases occurring after that point are subject to reporting.

(6) A TRI facility identification number has been assigned to each facility that previously submitted Form R reports. This identification number is designed to simplify locating facility reports. All facilities which submitted a Form R previously will receive a section 313 compliance package that includes a self-adhesive mailing label with the TRI facility identification number. If this package does not contain a mailing label or you have misplaced it, contact the Emergency Planning and Community Right-to-Know Information Hotline for help in determining your TRI facility identification number.

(7) The toll-free telephone number for the Emergency Planning and Community Right-to-Know Information Hotline, 1-800-535-0202, is now accessible throughout the U.S., including Washington, D.C., and Alaska. The toll telephone number has been changed to 703-920-9877.

Important Changes to Form R for 1991

The Form R for reporting year 1991 contains many changes. The changes were made to consolidate related data elements and clarify reporting requirements. The following changes have been made for the 1991 reporting year (reports due on or before July 1, 1992):

- The format of Form R has been changed to make the data readable by the Optical Character Recognition (OCR) Scanner.
- Part II, Section 8 of Form R, "Source Reduction and Recycling Activities," contains data elements mandated by the Pollution Prevention Act of 1990 (PPA).
- Form R now consists of two parts:
  - Part I. Facility Identification Information (pages 1-2); and
  - Part II. Chemical-Specific Information (pages 3-9).

  Part II of previous Form Rs, "Off-Site Locations to which Toxic Chemicals are Transferred in Wastes," has been incorporated into Part II, Section 6 of this year's form, "Transfers of the Toxic Chemical in Wastes to Off-Site Locations." This change allows location information and transfer amounts to be reported together. Part III of previous Form Rs, "Chemical-Specific Information," is now Part II. Part IV of previous From Rs, "Supplemental Information," has been eliminated.
- A space was added to page 1 for indicating if the form being submitted is a revision.
- Space has been made available to enter the toxic chemical name and TRI facility identification number on every page of Form R (minimum of 9 pages per Form R). These spaces are designed to help ensure correct reporting by facilities and correct data entry by EPA. They are not required data elements.
- On page 1, Part I, Section 4.1, space has been added for including the reporting facility's mailing address if it differs from the street address.
- The data elements for entering the names of receiving streams and water bodies have been incorporated into Part II, Section 5, "Releases of the Toxic Chemical to the Environment On-Site." As a result, the amount released will appear next to the name of the receiving stream or water body.
- In Part II, Section 5, "Releases of the Toxic Chemical to the Environment On-Site," and Part II, Section 6, "Transfers of the Toxic Chemical in Wastes to Off-Site Locations," the range reporting columns have been removed. Space has been added to enter either an estimate or a code representing one of the three reporting ranges.
- Information on off-site transfers for recycling and energy recovery is included in Part II, Section 6, "Transfers of the Toxic Chemical in Wastes to Off-Site Locations." Section 6 has been modified to allow for more than one operation code (i.e., waste treatment, disposal, recycling, or energy recovery) and more than one amount to be entered per location.
- Section 6.1, "Discharges to Publicly Owned Treatment Works" now contains two parts: 6.1.A, "Total Quantity Transferred to POTWs and Basis of Estimate," and 6.1.B, "POTW Name and Location Information." If you transfer a toxic chemical in wastes to more than one POTW, enter the total transfers to all POTWs in section 6.1.A.1, and in section 6.1.A.2 enter the basis of estimate for the total amount transferred. In section 6.1.B., list the name and location of all POTWs that received the toxic chemical in wastes.

- If additional space is needed for completing Sections 5.3, "Discharges to Receiving Stream or Water Body" and Section 6, "Transfers of the Toxic Chemical in Wastes to Off-Site Locations," pages 5 and 6 should be photocopied, and the extra pages submitted.

- Part II, Section 7A, "On-Site Waste Treatment Methods and Efficiency," has been expanded and now is the only data element on page 7 of Form R. If additional space is needed for Section 7A (On-Site Waste Treatment Methods and Efficiency), this page may be photocopied, and the extra pages submitted. Page 8 contains two new required data elements: Section 7B, "On-Site Energy Recovery Processes," and Section 7C, "On-Site Recycling Processes."

- Page 9 consists of the required PPA data elements. Section 8, "Source Reduction and Recycling Activities," is now a required section of Form R. See Part II, Section 8 for the data elements.

Toxic Release Inventory Reporting Form R and Instructions

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Table II Section 313 Toxic Chemical List for Reporting Year 1991 ..... II-1

Appendix A Toxic Chemical Release Inventory Reporting Form R A-1

Reporting Form R Submission Checklist

1. Complete a separate Form R for each toxic chemical or chemical category you are reporting.

- ❑ 1.a Enter CAS number and toxic chemical name in Part II, Sections 1.1 and 1.2 (or the toxic chemical category name and category code in the CAS number section);
- ❑ 1.b Enter the toxic chemical, chemical category, or generic chemical name and the TRI facility identification number in the appropriate space on every page of Form R (optional); and
- ❑ 1.c Enter information that applies only to the toxic chemical or chemical category being reported.

2. Complete the report with information from the previous calendar year.

- ❑ 2.a Complete all sections, if applicable, or enter NA;
- ❑ 2.b Include both Parts I and II (minimum of 9 pages); and
- ❑ 2.c Sign the report certification (Part I, Section 3).

3. Submit by July 1, 1992, to:

- ❑ 3.a EPA Headquarters (original signature on Part I, Section 3 is required for each form submitted to EPA) at the following address:

  EPCRA Reporting Center
  P.O. Box 23779
  Washington, D.C. 20026-3779
  Attn: Toxic Chemical Release Inventory

  and

- ❑ 3.b State-designated section 313 contact (see Appendix F) or the designated official of an Indian tribe.

4. Keep a copy of each Form R and all supporting documentation for your files. (All such information must be kept for three years.)

Additional requirements if claiming a toxic chemical identity a trade secret (see Section A.2: Trade Secret Claims):

1. Submit two complete Form R reports (minimum of 9 pages);

- ❑ 1.a One that identifies the toxic chemical ("unsanitized");
- ❑ 1.b One that provides a generic chemical identity ("sanitized"); and
- ❑ 1.c Certify both with an original signature and date.

2. Provide two complete trade secret substantiation forms:

- ❑ 2.a One that identifies the toxic chemical ("unsanitized");
- ❑ 2.b One that provides a generic chemical identity ("sanitized"); and
- ❑ 2.c Certify both with an original signature and date.

3. Check that the sanitized and unsanitized versions are correctly identified in Part I, Section 2.2.

4. Originals of both Form Rs and both trade secret substantiation forms should be submitted to EPA Headquarters (see address above).

5. Verify if submission requirements in your state differ from EPA's by contacting your state-designated section 313 contact (see Appendix F), and submit the correct version(s).

A. General Information

Submission of EPA Form R, the Toxic Chemical Release Inventory (TRI) Reporting Form, is required by section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA, or Title III of the Superfund Amendments and Reauthorization Act of 1986), Public Law 99-499. The information contained in Form R constitutes a "report," and the submission of a report to the appropriate authorities constitutes "reporting."

Reporting is required to provide the public with information on the releases of listed toxic chemicals in their communities and to provide EPA with release information to assist the Agency in determining the need for future regulations. Facilities must report the quantities of both routine and accidental releases of listed toxic chemicals, as well as the maximum amount of the listed toxic chemical on-site during the calendar year and the amount contained in wastes transferred off-site.

The Pollution Prevention Act, passed into law in October, 1990 (Pub. L. 101-508), added reporting requirements to Form R. These new requirements will affect all facilities required to submit Form R under section 313 of EPCRA. The new data, which is described in the preceding section, "Important Changes to Form R for 1991," will be required beginning with reports for calendar year 1991 (first reports due to EPA and States by July 1, 1992).

A completed Form R must be submitted for each toxic chemical manufactured, processed, or otherwise used at each covered facility as described in the reporting rule in 40 CFR Part 372 (originally published February 16, 1988, in the Federal Register). These instructions supplement and elaborate on the requirements in the reporting rule. Together with the reporting rule, they constitute the reporting requirements. All references in these instructions are to sections in the reporting rule unless otherwise indicated.

A.1 How to Assemble a Complete Report

The Toxic Chemical Release Reporting Form, EPA Form R, consists of two parts:

- Part I, Facility Identification Information (pages 1 and 2); and
- Part II, Chemical-Specific Information (pages 3-9).

Most of the information required in Part I of Form R can be completed, photocopied, and attached to each chemical-specific report. However, Part I of each Form R submitted must have an original signature on the certification statement and the trade secret designation must be entered as appropriate. Part II must be completed separately for each toxic chemical or chemical category. Because a complete Form R consists of at least 9 unique pages, any submissions containing less than 9 unique pages is not a valid submission.

A complete report for any listed toxic chemical that is not claimed as a trade secret consists of the following completed parts:

- Part I with an original signature on the certification statement (Section 2); and
- Part II (Section 8 is now mandatory).

Staple all 9 pages of each report together. If you check yes on Part II, Section 8.12, you may attach additional information on pollution prevention activities at your facility.

A.2 Trade Secret Claims

For any toxic chemical whose identity is claimed as a trade secret, you must submit to EPA two versions of the substantiation form as prescribed in 40 CFR Part 350, published July 29, 1988, in the Federal Register (53 FR 28772) as well as two versions of Form R. One set of forms, the "unsanitized" version, should provide the actual identity of the toxic chemical. The other set of forms, the "sanitized" version, should provide only a generic identity of the toxic chemical. If EPA deems the trade secret substantiation form valid, only the sanitized set of forms will be made available to the public.

Use the order form in this document to obtain copies of the rule and substantiation form. Further explanation of the trade secret provisions is provided in Part I, Sections 2.1 and 2.2, and Part II, Section 1.3, of the instructions.

In summary, a complete report to EPA for a toxic chemical claimed as a trade secret must include all of the following:

- A completed "unsanitized" version of a Form R report including the toxic chemical identity (staple the pages together);

- A "sanitized" version of a completed Form R report in which the toxic chemical identity items (Part II, Sections 1.1 and 1.2) have been left blank but in which a generic chemical name has been supplied (Part II, Section 1.3) (staple the pages together);
- A completed "unsanitized" version of a trade secret substantiation form (staple the pages together); and
- A "sanitized" version of a completed trade secret substantiation form (staple the pages together).

Securely fasten all four reports together.

Some states also require submission of both sanitized and unsanitized reports for toxic chemicals whose identity is claimed as a trade secret. Others require only a sanitized version. Facilities may jeopardize the trade secret status of a toxic chemical by submitting an unsanitized version of Form R to a state agency or Indian tribe that does not require unsanitized forms. You may identify an individual State's submission requirements by contacting the appropriate state-designated Section 313 contact (see Appendix F).

A.3 Recordkeeping

Sound recordkeeping practices are essential for accurate and efficient TRI reporting. It is in the facility's interest, as well as EPA's, to maintain records properly.

Facilities must keep a copy of each Form R report filed for at least three years from the date of submission. These reports will be of use in subsequent years when completing future Form R reports.

Facilities must also maintain those documents, calculations, worksheets, and other forms upon which they relied to gather information for prior Form R reports. In the event of a problem with data elements on a facility's Form R, EPA may request documentation from the facility that supports the information reported. In the future, EPA may conduct data quality reviews of past Form R submissions. An essential component of this process would be to review a facility's records for accuracy and reliability.

A partial list of records, organized by year, that a facility should maintain include:

- Previous years' Form Rs;
- Section 313 Reporting Threshold Worksheets;
- Engineering calculations and other notes;
- Purchase records from suppliers;
- Inventory data;
- EPA (NPDES) permits;
- EPCRA Section 312, Tier II Reports;
- Monitoring records;
- Flowmeter data;
- RCRA Hazardous Waste Generator's Report;
- Pretreatment reports filed by the facility with the local government;
- Invoices from waste management companies;
- Manufacturer's estimates of treatment efficiencies;
- RCRA Manifests; and
- Process diagrams that indicate emissions and releases.

A.4 When the Report Must be Submitted

The report for any calendar year must be submitted on or before July 1 of the following year (e.g., the report for calendar year 1991, January-December, must be submitted on or before July 1, 1992).

Voluntary Revision of a Previous Submission

Voluntary revisions must be submitted on a Form R identical to the version originally submitted to EPA for that reporting year. The Emergency Planning and Community Right-to-Know Information Hotline can help you identify the version of Form R used for each reporting year.

For the 1991 reporting year only, enter "X" in the space marked "Enter 'X' here if this is a revision" on page 1 of the form if you are making a voluntary revision to a previous Form R submission. If you have obtained the Document Control Number (DCN) of the original submission from EPA, enter that number in red ink in any available space on page 1 of the form. Enter the revised data to the Form R and circle all changes from the original submission in red ink. Sign the certification statement and provide a current date.

For reporting years prior to 1991, there are two options for making voluntary revisions. The first is to submit a photocopy of the original Form R submission (from your file), with corrections made in red ink. Write the words "VOLUNTARY REVISION", and the Document Control Number (DCN), if available, on page 1 of the Form R, and re-sign and re-date the certification statement on page 1.

The second is to obtain a blank Form R for the reporting year affected by the correction(s). Complete all data elements on this Form, but circle with red ink those data elements that you have changed. A cover letter should be included to clarify exactly which voluntary revisions you have made.

Send the entire completed or revised Form R report to EPA and the appropriate state agency (or the designated official of an Indian tribe). Submissions for the next calendar year are not considered revisions of a previous year's data.

A.5 Where to Send the Form R

Form R submissions must be sent to both EPA and the State (or the designated official of an Indian tribe). If a Form R is not received by both EPA and the State (or the designated official of an Indian tribe), the submitter is considered out of compliance and subject to enforcement action.

Send reports to EPA by mail to:

EPCRA Reporting Center
P.O. Box 23779
Washington, D.C. 20026-3779
Attn: Toxic Chemical Release Inventory

To submit a Form R via hand delivery or certified mail, please call the Emergency Planning and Community Right-to-Know Information Hotline to obtain the street address of the EPCRA Reporting Center.

In addition, you must also send a copy of the report to the State in which the facility is located. ("State" also includes: the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the U.S. has jurisdiction.) Refer to Appendix F for the appropriate State submission addresses.

Facilities located on Indian land should send a copy to the Chief Executive Officer of the applicable Indian tribe. Some tribes have entered into a cooperative agreement with States; in this case, Form R submissions should be sent to the entity designated in the cooperative agreement.

Submission of section 313 reports in magnetic media and computer-generated facsimile formats has been approved by EPA. EPA has developed a package called the "Toxic Chemical Release Inventory Reporting System." The easy-to-use diskette comes with complete instructions for its use. It also provides prompts and messages to help you report according to EPA instructions. For copies of the diskette you may call the EPCRA Hotline.

Many firms are offering computer software to assist facilities in producing magnetic media submissions or computer-generated facsimiles of Form R reports. To ensure accuracy, EPA will only accept magnetic media submissions and computer-generated facsimiles that meet basic specifications established by EPA. To determine if software offered by a firm meets these specifications, EPA reviews and approves all software upon request. Call the Emergency Planning and Community Right-to-Know Information Hotline to identify the software that has been approved by EPA for the current reporting year.

It should be noted, however, that some States may accept only hard copies of Form R. If this is the case, a magnetic media or computer-generated facsimile may be unacceptable.

A.6 How to Obtain Forms and Other Information

A copy of Form R is included in this booklet. Remove this form and produce as many photocopies as needed. Related guidance documents may be obtained from:

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

See Appendix I for the document request form and more information on available documents.

Questions about completing Form R may be directed to the Emergency Planning and Community Right-to-Know Information Hotline at the following address or telephone numbers.

Emergency Planning and Community
Right-to-Know Information Hotline
U.S. Environmental Protection Agency
401 M Street, S.W. (OS-120)
Washington, DC 20460

(800) 535-0202 or (703) 920-9877
from 8:30 am - 7:30 pm Eastern Time
(Mon-Fri, except Federal Holidays.)

EPA Regional Staff may also be of assistance. Refer to Appendix G for a list of EPA Regional Offices.

A.7 Who Must Submit this Form

Section 313 of EPCRA requires that reports be filed by owners and operators of facilities that meet all three of the following criteria:

- The facility has 10 or more full-time employees; and
- The facility is included in Standard Industrial Classification (SIC) Codes 20 through 39; and
- The facility manufactures (defined to include importing), processes, or otherwise uses any listed toxic chemical in quantities equal to or greater than the established threshold in the course of a calendar year.

B. How to Determine if Your Facility Must Submit EPA Form R

(See Figure 1 for more information.)

B.1 Full-Time Employee Determination

A "full-time employee," for purposes of section 313 reporting, is defined as 2,000 work hours per year. This definition is dependent only upon the number of hours worked by all employees for the facility during the calendar year and not the number of persons working. To determine the number of full-time employees working for your facility, add up the hours worked by all employees during the calendar year, including contract employees and sales and support staff working for the facility, and divide the total by 2,000 hours. In other words, if the total number of hours worked by all employees is 20,000 hours or more, your facility meets the ten employee threshold.

Examples include:

- A facility consists of 11 employees who each worked 1500 hours for the facility in a calendar year. Consequently, the total number of hours worked by all employees for the facility during the calendar year is 16,500 hours. The number of full-time employees for this facility is equal to 16,500 hours divided by 2,000 hours per full-time employee, or 8.3 full-time employees. Therefore, even though 11 persons worked for this facility during the calendar year, the number of hours worked is equivalent to 8.3 full-time employees. This facility does not meet the employee criteria and is not subject to section 313 reporting.

- Another facility consists of 6 workers and 3 sales staff. The 6 workers each worked 2,000 hours for the facility in the calendar year. The sales staff also each worked 2,000 hours in the calendar year although they may have been on the road half of the year. In addition, 5 contract employees were hired for a period during which each worked 400 hours for the facility. The total number of hours is equal to the time worked by the workers at the facility (12,000 hours), plus the time worked by the sales staff for the facility (6,000 hours), plus the time worked by the contract employees at the facility (2,000 hours), or 20,000 hours. Dividing the 20,000 hours by 2,000 yields 10 full-time employees. This facility has met the full-time employee criteria and may be subject to reporting if the other criteria are met.

B.2 Primary SIC Code Determination

Standard Industrial Classification (SIC) codes 20-39 are covered by the rule and are listed in Table I. The first two digits of a 4-digit SIC code define a major business sector, while the last two digits denote a facility's specialty within the major sector. If you are not familiar with the SIC codes that apply to your facility, contact your trade association, Chamber of Commerce, or legal counsel. For a detailed description of 4-digit SIC codes, refer to the "Standard Industrial Classification Manual 1987." Clothbound editions are available in most major libraries or may be ordered through the National Technical Information Service, 5285 Port Royal Road, Springfield, VA, 22161, (703) 487-4650. The access number for the clothbound manual is PB87-100012, and the price is $30.00.

Section 313 requires that reports be filed by "facilities," which are defined as "all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person." The SIC code system, however, classifies businesses not as "facilities," but as "establishments," which are defined as "distinct and separate economic activities [that] are performed at a single physical location."

Guidelines for using these definitions to determine primary SIC codes for facilities are presented in the following subsections.

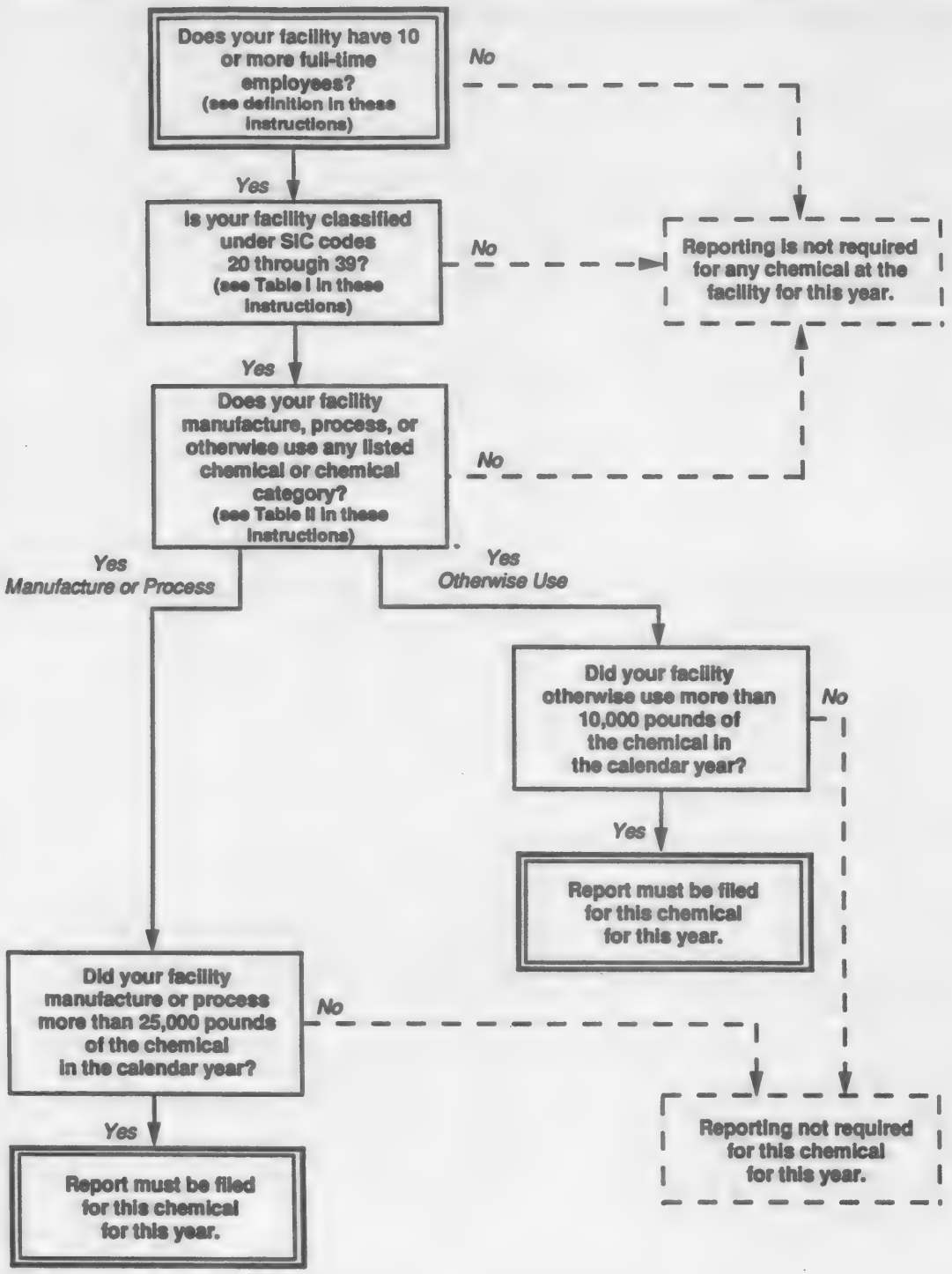
B.2.a Multi-Establishment Facilities

Your facility may include multiple establishments that have different SIC codes. If so, calculate the value of the products produced or shipped from each establishment within the facility and then use the following rule to determine if your facility meets the SIC code criterion:

- If the total value of the products shipped from or produced at establishments with primary SIC codes between 20 and 39 is greater than 50 percent of the value of the entire facility's products and services, the entire facility meets the SIC code criterion.

Figure 1

Determining Applicability of Section 313 Requirements


Does your facility have 10 or more full-time employees? (see definition in these instructions)
No
Yes
Is your facility classified under SIC codes 20 through 39? (see Table I in these instructions)
No
Reporting is not required for any chemical at the facility for this year.
Yes
Does your facility manufacture, process, or otherwise use any listed chemical or chemical category? (see Table II in these instructions)
No
Yes
Manufacture or Process
Yes
Otherwise Use
Did your facility otherwise use more than 10,000 pounds of the chemical in the calendar year?
No
Yes
Report must be filed for this chemical for this year.
Did your facility manufacture or process more than 25,000 pounds of the chemical in the calendar year?
No
Yes
Report must be filed for this chemical for this year.
Reporting not required for this chemical for this year.

- If any one establishment with a primary SIC code between 20 and 39 produces or ships products whose value exceeds the value of products and services produced or shipped by any other establishment within the facility, the facility also meets the SIC code criterion.

The value of production attributable to a particular establishment may be isolated by subtracting the value of products obtained from other establishments within the same facility that are incorporated into its final products. This procedure eliminates the potential for "double counting" production in situations where establishments are engaged in sequential production activities at a single facility.

Examples include:

- One establishment in a gold mining facility is engaged primarily in the exploration of gold deposits, developing mines, and mining gold. This establishment deploys several means to mine the gold, including crushing, grinding, gravity concentration, froth flotation, amalgamation, cyanidation, and the production of bullion at the mine and mill sites (these processes are classified under SIC code 1041). All of the ore discovered through this establishment is delivered to a second establishment which is primarily engaged in rolling, drawing, and extruding the gold for sale and distribution. The smeltering establishment in the facility is classified under SIC code 3339. The facility could calculate the value of production for each establishment separately (both SIC code 1041 and 3339 having separate values). Alternatively, the facility could determine the value of the smelter operation by subtracting the value of the ore produced from the value of entire facility's production (Gross value of facility - SIC code 1041 value = Value for SIC code 3999).

- A food processing establishment in a facility processes crops grown at the facility in a separate establishment. The facility could base the value of the products of each establishment on the total production value of each establishment. Alternatively, the facility could first determine the value of the crops grown at the agricultural establishment, and then calculate the contribution of the food processing establishment by subtracting the crop value from the total value of the product shipped from the processing establishment. (Value of product shipped from processing - crop value = value of processing establishment)

A covered multi-establishment facility must make toxic chemical threshold determinations and, if required, must report all relevant information about releases, source reduction, recycling, and waste treatment associated with a listed toxic chemical for the entire facility, even from establishments that are not in SIC codes 20-39. EPA realizes, however, that certain establishments in a multi-establishment facility can be, for all practical purposes, separate business units. Therefore, individual establishments may report releases separately, provided that the total releases for the whole facility is represented by the sum of releases reported by the separate establishments.

B.2.b Auxiliary Facilities

An auxiliary facility is one that supports another facility's activities (e.g., research and development laboratories, warehouses, storage facilities, and waste-treatment facilities). An auxiliary facility can assume the SIC code of another covered facility if its primary function is to service that other covered facility's operations. Thus, a separate warehouse facility (i.e., one not located within the physical boundaries of a covered facility) may become a covered facility because it services a facility in SIC codes 20-39. Auxiliary facilities that are in SIC codes 20-39 are required to report if they meet the employee criterion and reporting thresholds for manufacture, process, or otherwise use. Auxiliary establishments that are part of a multi-establishment facility must be factored into threshold determinations for the facility as a whole.

B.2.c Facility-Related Exemptions

Laboratories: Listed toxic chemicals that are manufactured, processed, or otherwise used in laboratory activities at a covered facility under the direct supervision of a technically qualified individual do not have to be considered for threshold and release calculations. However, pilot plant scale and specialty chemical production do not qualify for this laboratory activities exemption.

Property Owners: You are not required to report if you merely own real estate on which a facility covered by this rule is located; that is, you have no other business interest in the operation of that facility (e.g., your company owns an industrial park). The operator of that facility, however, is subject to reporting requirements.

B.3 Activity Determination

B.3.a Definitions of "Manufacture," "Process," and "Otherwise Use"

Manufacture: The term "manufacture" means to produce, prepare, compound, or import a listed toxic chemical. (See Part II, Section 3.1 of these instructions for further clarification.)

Import is defined as causing the toxic chemical to be imported into the customs territory of the United States. If you order a listed toxic chemical (or a mixture containing the chemical) from a foreign supplier, then you have imported the chemical when that shipment arrives at your facility directly from a source outside of the United States. By ordering the chemical, you have "caused it to be imported," even though you may have used an import brokerage firm as an agent to obtain the toxic chemical.

The term manufacture also includes coincidental production of a toxic chemical (e.g., as a byproduct or impurity) as a result of the manufacture, processing, otherwise use, or treatment of other chemical substances. In the case of coincidental production of an impurity (i.e., a toxic chemical that remains in the product that is distributed in commerce), the de minimis limitation, discussed in Section B.4.b of these instructions, applies. The de minimis limitation does not apply to byproducts (e.g., a toxic chemical that is separated from a process stream and further processed or disposed). Certain listed toxic chemicals may be manufactured as a result of wastewater treatment or other treatment processes. For example, neutralization of acid wastewater can result in the coincidental manufacture of ammonium nitrate (solution).

Example 1: Coincidental Manufacture

Your company, a nitric acid manufacturer, uses ammonia in a waste treatment system to neutralize an acidic wastewater stream containing nitric acid. The reaction of the ammonia and nitric acid produces an ammonium nitrate solution. Ammonium nitrate solution is a listed toxic chemical, as are nitric acid and ammonia. Your facility thus otherwise uses ammonia as a reactant and manufactures ammonium nitrate solution as a byproduct. If the ammonium nitrate solution is produced in a quantity that exceeds the threshold (e.g., 25,000 pounds for the reporting year), the facility must report for the ammonium nitrate solution. If more than 10,000 pounds of ammonia is added to the wastewater treatment system, then the facility must report for ammonia.

Process: The term "process" means the preparation of a listed toxic chemical, after its manufacture, for distribution in commerce. Processing is usually the intentional incorporation of a toxic chemical into a product (see Part II, Section 3.2 of these instructions for further clarification). Processing includes preparation of the toxic chemical in the same physical state or chemical form as that received by your facility, or preparation that produces a change in physical state or chemical form. The term also applies to the processing of a mixture or other trade name product (see Section B.4.b of these instructions) that contains a listed toxic chemical as one component.

Otherwise Use: The term "otherwise use" encompasses any activity involving a listed toxic chemical at a facility that does not fall under the definitions of "manufacture" or "process." A chemical that is otherwise used by a

Example 2: Typical Process and Manufacture Activities

- Your company receives toluene, a listed toxic chemical, from another facility, and reacts the toluene with air to form benzoic acid. Your company processes toluene and manufactures benzoic acid. Benzoic acid, however, is not a listed toxic chemical and thus does not trigger reporting requirements.
- Your facility combines toluene purchased from a supplier with various materials to form paint. Your facility processes toluene.
- Your company receives a nickel compound (nickel compound is a listed toxic chemical category) as a bulk solid and performs various size-reduction operations (e.g., grinding) before packaging the compound in 50 pound bags. Your company processes the nickel compound.
- Your company receives a prepared mixture of resin and chopped fiber to be used in the injection molding of plastic products. The resin contains a listed toxic chemical that becomes incorporated into the plastic. Your facility processes the toxic chemical.

Example 3: Otherwise Use

When your facility cleans equipment with toluene, you are otherwise using toluene. Your facility also separates two components of a mixture by dissolving one component in toluene, and subsequently recovers the toluene from the process for reuse or disposal. Your facility otherwise uses toluene.

facility is not intentionally incorporated into a product distributed in commerce (see Part II, Section 3.3 of these Instructions for further clarification).

B.3.b Activity Exemptions

Use Exemptions. Certain uses of listed toxic chemicals are specifically exempted:

- use as a structural component of the facility;
- use in routine janitorial or facility grounds maintenance;
- personal uses by employees or other persons;
- use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility; or
- use of toxic chemicals contained in intake water (used for processing or non-contact cooling) or in intake air (used either as compressed air or for combustion).

Article Exemptions. Quantities of a listed toxic chemical contained in an article do not have to be factored into threshold or release determinations when that article is processed or otherwise used at your facility. An article is defined as a manufactured item that is formed to a specific shape or design during manufacture, that has end-use functions dependent in whole or in part upon its shape or design during end-use, and that does not release a toxic chemical under normal conditions of the processing or otherwise use of that item at the facility.

If the processing or otherwise use of similar articles results in a total release of less than 0.5 pounds of a toxic chemical in a calendar year to any environmental media, EPA will allow this release quantity to be rounded to zero, and the manufactured items remain exempt as articles. EPA requires facilities to round off and report all estimates to the nearest whole number. The 0.5-pound limit does not apply to each individual article, but applies to the sum of all releases from processing or otherwise use of like articles.

The article exemption applies to the normal processing or otherwise use of an article. **It does not apply to the manufacture of an article.** Toxic chemicals processed into articles produced at a facility must be factored into threshold and release determinations.

A closed item containing toxic chemicals (e.g., a transformer containing PCBs) that does not release the toxic chemicals during normal use is considered an article if a facility uses the item as intended and the toxic chemicals are not released. If a facility services the closed item (e.g., a transformer) by replacing the toxic chemicals, the toxic chemicals added during the reporting year must be counted in threshold and release calculations.

Example 4: Article Exemption

- Lead that is incorporated into a lead acid battery is processed to manufacture the battery, and therefore must be counted toward threshold and release determinations. However, the use of the lead acid battery elsewhere in the facility does not have to be counted. Disposal of the battery after its use does not constitute a "release"; thus, the battery remains an article.
- Metal rods that are extruded into wire are not articles because their form changes during processing.
- If an item used in the facility is fragmented, the item is still an article if those fragments being discarded remain identifiable as the article (e.g., recognizable pieces of a cylinder, pieces of wire). For instance, an 8-foot piece of wire is broken into two 4-foot pieces of wire, without releasing any toxic chemicals. Each 4-foot piece is identifiable as a piece of wire; therefore, the article status for these pieces of wire remains intact.
- Toxic chemicals received in the form of pellets are not articles because the pellet form is simply a convenient form for further processing of the material.

When the processing or otherwise use of an item generates fumes, dust, filings, or grindings, the article exemption is not applicable. The toxic chemical(s) in the item must be counted toward the appropriate threshold determination, and the fumes, dust, filings, and grindings must be reported as releases or wastes. Scrap pieces that are recognizable as an article do not constitute a release.

B.3.c Activity Qualifiers

Table II contains the list of individual toxic chemicals and categories of chemicals subject to 1991 calendar year reporting. Some of the toxic chemicals listed in Table II have parenthetic qualifiers listed next to them. A toxic chemical that is listed without a qualifier is subject to reporting in all forms in which it is manufactured, processed, and otherwise used.

Fume or dust. Three of the metals on the list (aluminum, vanadium, and zinc) contain the qualifier "fume or dust." Fume or dust refers to dry forms of these metals but does not refer to "wet" forms such as solutions or slurries. As explained in Section B.3a of these instructions, the term manufacture includes the generation of a toxic chemical as a byproduct or impurity. In such cases, a facility should determine if, for example, it generated more than 25,000 pounds of aluminum fume or dust in 1991 as a result of its activities. If so, the facility must report that it manufactures "aluminum (fume or dust)." Similarly, there may be certain technologies in which one of these metals is processed in the form of a fume or dust to make other toxic chemicals or other products for distribution in commerce. In reporting releases, the facility would only report releases of the fume or dust.

EPA considers dusts to consist of solid particles generated by any mechanical processing of materials including crushing, grinding, rapid impact, handling, detonation, and decrepitation of organic and inorganic materials such as rock, ore, and metal. Dusts do not tend to flocculate, except under electrostatic forces. A fume is an airborne dispersion consisting of small solid particles created by condensation from a gaseous state, in distinction to a gas or vapor. Fumes arise from the heating of solids such as lead. The condensation is often accompanied by a chemical reaction, such as oxidation. Fumes flocculate and sometimes coalesce.

Manufacturing qualifiers. Two of the entries to the section 313 toxic chemical list contain a qualifier relating to manufacture. For isopropyl alcohol, the qualifier is "manufacturing – strong acid process." For saccharin, the qualifier simply is "manufacturing." For isopropyl alcohol, the qualifier means that only facilities manufacturing isopropyl alcohol by the strong acid process are required to report. In the case of saccharin, only manufacturers of the toxic chemical are subject to the reporting requirements. A facility that processes or otherwise uses either toxic chemical would not be required to report for those toxic chemicals. In both cases, supplier notification does not apply because only manufacturers, not users, of the toxic chemical must report.

Solutions. Two substances on the list, ammonium nitrate and ammonium sulfate, are qualified by the term "solution," which refers to the physical state of these toxic chemicals. Solid, molten, and pelletized forms of these toxic chemicals are exempt from threshold and release determinations. Only facilities that manufacture, process, or otherwise use these toxic chemicals in the form of a solution are required to report. Supplier notification applies only if the toxic chemical is distributed as a solution.

Phosphorus (yellow or white). The listing for phosphorus is qualified by the term "yellow or white." This means that only manufacturing, processing, or otherwise use of phosphorus in the yellow or white chemical form triggers reporting. Conversely, manufacturing, processing, or otherwise use of "black" or "red" phosphorus does not trigger reporting. Supplier notification also applies only to distribution of yellow or white phosphorus.

Asbestos (friable). The listing for asbestos is qualified by the term "friable," referring to the physical characteristic of being able to be crumbled, pulverized, or reducible to a powder with hand pressure. Only manufacturing, processing, or otherwise use of asbestos in the friable form triggers reporting. Supplier notification applies only to distribution of mixtures or trade name products containing friable asbestos.

Aluminum Oxide (fibrous forms). The listing for aluminum oxide is qualified by the term "fibrous forms." Fibrous refers to a man-made form of aluminum oxide that is processed to produce strands or filaments which can be cut to various lengths depending on the application. Only manufacturing, processing, or otherwise use of aluminum oxide in the fibrous form triggers reporting. Supplier notification applies only to distribution of mixtures or trade name products containing fibrous forms of aluminum oxide.

B.4 Threshold Determination

Section 313 reporting is required if threshold quantities are exceeded. Separate thresholds apply to the amount of the toxic chemical that is manufactured, processed, or otherwise used.

You must submit a report for any listed toxic chemical that is manufactured or processed at your facility in excess of the following threshold:

- **25,000 pounds during the course of a calendar year.**

You must submit a report if the quantity of a listed toxic chemical that is otherwise used at your facility exceeds:

- **10,000 pounds during the course of a calendar year.**

B.4.a How to Determine If Your Facility Has Exceeded Thresholds

To determine whether your facility has exceeded a section 313 reporting threshold, compare quantities of listed toxic chemicals that you manufacture, process, or otherwise use to the respective thresholds for those activities. A worksheet is provided in Figure 2 to assist facilities in determining whether they exceed any of the reporting thresholds. This worksheet also provides a format for maintaining reporting facility records. Use of this worksheet is not required and the completed worksheet(s) should not accompany Form R reports submitted to EPA and the State.

Complete a separate worksheet for each section 313 toxic chemical or chemical category. Base your threshold determination for listed toxic chemicals with qualifiers only on the quantity of the toxic chemical satisfying the qualifier.

Use of the worksheet is divided into three steps:

Step 1 allows you to record the gross amount of the toxic chemical or chemical category involved in activities throughout the facility. Pure forms as well as the amounts of the toxic chemical or chemical category present in mixtures or trade name products must be considered. The types of activity (i.e., manufacturing, processing, or otherwise using) for which the toxic chemical is used must be identified because separate thresholds apply to each of these activities. A record of the information source(s) used should be kept. Possible information sources include purchase records, inventory data, and calculations by a process engineer. The data collected in Step 1 will be totalled for each activity to identify the overall amount of the toxic chemical or chemical category manufactured (including imported), processed, or otherwise used.

Step 2 allows you to identify uses of the toxic chemical or chemical category that were included in Step 1 but are exempt under section 313. Do not include in Step 2 exempt forms of the toxic chemical not included in the calculations in Step 1. For example, if freon contained in the building's air conditioners was not reported in Step 1, you would not include the amount as exempt in Step 2. Step 2 is intended for use when one form or use of the toxic chemical is exempt while other forms require reporting. Note the type of exemption for future reference. Also identify, if applicable, the fraction or percentage of the toxic chemical present that is exempt. Add the amounts in each activity to obtain a subtotal for exempted amounts of the toxic chemical or chemical categories at the facility.

Step 3 involves subtracting the result of Step 2 from the results of Step 1 for each activity. Compare this net sum to the applicable activity threshold. If the threshold is met or exceeded for any of the three activities, a facility must submit a Form R for that toxic chemical or chemical category. This worksheet should be retained in either case to document your determination for reporting or not reporting, but should not be submitted with the report. Do not sum quantities of the toxic chemical that are manufactured, processed, and otherwise used at your facility, because each of these activities requires a separate threshold determination. For example, if in a calendar year you processed 20,000 pounds of a chemical and you otherwise used 6,000 pounds of that same toxic chemical, your facility has not met or exceeded any applicable threshold and thus is not required to report for that chemical.

You must submit a report if you exceed any threshold for any listed toxic chemical or chemical category. For example, if your facility processes 22,000 pounds of a listed toxic chemical and also otherwise uses 16,000 pounds of that same toxic chemical, it has exceeded the otherwise used threshold (10,000 pounds) and your facility must report even though it did not exceed the process threshold. However, in preparing your reports, you must consider all non-exempted activities and all releases of the toxic chemical from your facility, not just releases from the otherwise use activity.

OPTIONAL SECTION 313 REPO

Facility Name: _____
Toxic Chemical or Chemical Category: _____
Reporting Year: _____

Step 1. Identify amounts of the toxic chemical manufactured, proce

Mixture Name or Other Identifier	Information Source	Percent by Weight	Tota (
1.			
2.			
3.			
4.			
5.			
6.			
7.			
Subtotal:			

Step 2. Identify exempt forms of the toxic chemical that have been

Mixture Name as Listed Above	Applicable Exemption	Note Fraction Exempt (if Ap
1.		
2.		
3.		
4.		
5.		
6.		
7.		
Subtotal:		

Step 3. Calculate the amount subject to threshold:

Compare to thresholds for section 313 reporting.

If any threshold is met, reporting is required for all activities. Do

Figure 2

EPORTING THRESHOLD WORKSHEET

_____ Date Worksheet Prepared: _____

_____ Prepared By: _____

_____

rocessed, or otherwise used.

Total Weight (in lbs)	Amount of the Listed Toxic Chemical by Activity (in lbs.):		
	Manufactured	Processed	Otherwise Used
	(A) _____ lbs.	(B) _____ lbs.	(C) _____ lbs.

been included in Step 1.

tion or Percent (if Applicable)	Exempt Amount of the Toxic Chemical from Above (in lbs.):		
	Manufactured	Processed	Otherwise Used
	(A_1) _____ lbs.	(B_1) _____ lbs.	(C_1) _____ lbs.

($A - A_1$) _____ lbs. ($B - B_1$) _____ lbs. ($C - C_1$) _____ lbs.

25,000 lbs. 25,000 lbs. 10,000 lbs.

Do not submit this worksheet with Form R. Retain for your records.

Also note that threshold determinations are based upon the actual amounts of a toxic chemical manufactured, processed, or otherwise used over the course of the calendar year. The threshold determination may not relate to the amount of a toxic chemical brought on-site during the calendar year. For example, if a stockpile of 100,000 pounds of a toxic chemical is present on-site but only 20,000 pounds is applied to a process, only the 20,000 pounds processed is counted toward a threshold determination, not the entire 100,000 pounds of the stockpile.

Threshold Determinations for On-Site Reuse/Recycle Operations.

Threshold determinations of listed toxic chemicals that are recycled or reused at the facility are based only on the amount of the toxic chemical that is added during the year, not the total volume in the system. For example, a facility operates a refrigeration unit that contains 15,000 pounds of ammonia at the beginning of the year. The system is charged with 2,000 pounds of ammonia during the year. The facility has therefore "otherwise used" only 2,000 pounds of the covered toxic chemical and is not required to report (unless there are other "otherwise use" activities of ammonia which, when taken together, exceed the reporting threshold). If, however, the whole refrigeration unit was recharged with 15,000 pounds of ammonia during the year, the facility would exceed the otherwise use threshold, and be required to report.

This exemption does not apply to toxic chemicals "recycled" off-site and returned to a facility. Such toxic chemicals returned to a facility are treated as the equivalent of newly purchased material for purposes of section 313 threshold determinations.

Threshold Determinations for Chemical Categories.

A number of chemical compound categories are subject to reporting. See Table II for a listing of these toxic chemical categories. When reporting for one of these toxic chemical categories, all individual members of a category that are manufactured, processed, or otherwise used must be counted. However, threshold determinations must be made separately for each of the three activities. Do not include in these threshold determinations for a category any chemicals that are also specifically listed section 313 toxic chemicals (see Table II) or specific toxic chemicals that have been deleted from the category (e.g., three compounds deleted from copper compound category -- see the introduction to these instructions). Specifically listed toxic chemicals are subject to their own, individual threshold determination.

Threshold determinations for metal-containing compounds present a special case. If, for example, your facility processes several different lead compounds, base your threshold determination on the total weight of all lead compounds processed. However, if your facility processes both the "parent" metal (lead) as well as one or more lead compounds, you must make threshold determinations for both because they are separately listed toxic chemicals. If your facility exceeds thresholds for both the parent metal and compounds of that same metal, EPA allows you to file one combined report (e.g., one report for lead compounds, including lead) because the release information you will report in connection with metal compounds will be the total pounds of the parent metal released.

One other case involving metal compounds should be noted. Some metal compounds may contain more than one listed metal. For example, lead chromate is both a lead compound and a chromium compound. In such cases, if applicable thresholds are exceeded, you are required to file two separate reports, one for lead compounds and one for chromium compounds. Apply the total weight of the lead chromate to the threshold determinations for both lead compounds and chromium compounds. However, only the amount of each parent metal released (not the amount of the compound) would be reported on the appropriate sections of both Form Rs.

B.4.b Mixtures and Trade Name Products

Toxic chemicals contained in mixtures and trade name products must be factored into threshold and release determinations.

If your facility processed or otherwise used mixtures or trade name products during the calendar year, you are required to use the best information available to determine whether the components of a mixture are above the de minimis concentration and, therefore, must be included in threshold and release determinations. If you know that a mixture or trade name product contains a specific toxic chemical, combine the amount of the toxic chemical in the mixture or trade name product with other amounts of the same toxic chemical processed or otherwise used at your facility for threshold and release determinations. If you know that a mixture contains a toxic chemical but no concentration information is provided by the supplier, you do not have to consider the amount of the toxic chemical present in that mixture for purposes of threshold and release determinations.

Example 5: Mixture and Trade Name Products

Scenario #1: Your facility uses 12,000 pounds of an industrial solvent (Solvent X) for equipment cleaning. The Material Safety Data Sheet (MSDS) for the solvent indicates that it contains at least 50 percent methyl ethyl ketone (MEK), a listed toxic chemical; however, it also states that the solvent contains 20 percent non-hazardous surfactants. This is the only MEK-containing chemical used at the facility.

Follow these steps to determine if the quantity of the toxic chemical in solvent x exceeds the threshold for otherwise use.

1) Determine a reasonable maximum concentration for the toxic chemical by subtracting out the non-hazardous surfactants (i.e., 100%-20% = 80%).

2) Determine the midpoint between the known minimum (50%) and the reasonable maximum calculated above (i.e., (80%-50%)/2+50 = 65%).

3) Multiply total weight of Solvent X otherwise used by 65 percent.

   12,000 pounds x 0.65 = 7,800 pounds

4) Because the total amount of MEK otherwise used at the facility was less than the 10,000 pound otherwise use threshold, the facility is not required to file a Form R for MEK.

Scenario #2: Your facility otherwise used 15,000 pounds of Solvent Y to clean printed circuit boards. The MSDS for the solvent lists only that Solvent Y contains at least 80% of a listed toxic chemical which is only identified as chlorinated hydrocarbons.

Follow these steps to determine if the quantity of the toxic chemical in solvent exceeds the threshold for otherwise use.

1) Because the specific chemical is unknown, the Form R will be filed for "chlorinated hydrocarbons." This name will be entered into Part II, Section 2.1, "Mixture Component Identity." (Note: Because your supplier is claiming the toxic chemical identity a trade secret, you do not have to file substantiation forms.)

2) The upper bound limit is assumed to be 100 percent and the lower bound limit is known to be 80 percent. Using this information, the specific concentration is estimated to be 90 percent (i.e., the mid-point between upper and lower limits).

   (1.0 + 0.80) / 2 = 0.90

3) The total weight of Solvent Y is multiplied by 90 percent when calculating for thresholds.

   15,000 x 0.90 = 13,500

4) Because the total amount of chlorinated hydrocarbons exceeds the 10,000 pound otherwise used threshold, you must file a Form R for this chemical.

Observe the following guidelines in estimating concentrations of toxic chemicals in mixtures when only limited information is available:

- If you know the lower and upper bound concentrations of a toxic chemical in a mixture, use the midpoint of these two concentrations for threshold determinations.
- If you know only the lower bound concentration, you should subtract out the percentages of any other known components to determine a reasonable upper bound concentration, and then determine a midpoint.
- If you have no information other than the lower bound concentration, calculate a midpoint assuming an upper bound concentration of 100%.
- If you only know the upper bound concentration, you must use it for threshold determinations.
- In cases where you only have a concentration range available, you should use the midpoint of the range extremes.

De Minimis Exemption. A listed toxic chemical does not have to be considered if it is present in a mixture at a concentration below a specified de minimis level. The de minimis level is 1.0%, or 0.1% if the toxic chemical meets the OSHA carcinogen standard. See Table II for the de minimis value associated with each listed toxic chemical. For mixtures that contain more than one member of a listed toxic chemical category, the de minimis level applies to the aggregate concentration of all such members and not to each individually. EPA included the de minimis exemption in the rule as a burden-reducing step, primarily because facilities are not likely to have information on the presence of a toxic chemical in a mixture or trade name product beyond that available in the product's MSDS. The de minimis levels are consistent with OSHA requirements for development of MSDS information concerning composition.

For threshold determinations, the de minimis exemption applies to:

- A listed toxic chemical in a mixture or trade name product received by the facility.
- A listed toxic chemical manufactured during a process where the toxic chemical remains in a mixture or trade name product distributed by the facility.

The de minimis exemption does not apply to:

- A toxic chemical manufactured at the facility that does not remain in a product distributed by the facility. A threshold determination must be made on the annual quantity of the toxic chemical manufactured regardless of the concentration. For example, quantities of formaldehyde created as a result of waste treatment must be applied toward the threshold for "manufacture" of this toxic chemical, regardless of the concentration of this toxic chemical in the waste.

In general, when the de minimis exemption applies to threshold determinations and the concentration of the toxic chemical in the mixture is below the de minimis limitation, then you are not required to report releases associated with the processing or otherwise use of the toxic chemical in that mixture. Note that it is possible to meet the threshold for a toxic chemical on a facility-wide basis, but not be required to calculate releases from a particular process because that process involves only mixtures containing the toxic chemical below the de minimis level.

Application of the de minimis exemption to process streams must also be reviewed. Mixtures containing toxic chemicals can be added to a process or generated within a process. A facility is required to consider and report releases from the process once the de minimis concentration level has been exceeded. All releases of the toxic chemical from the process which occur after the de minimis exemption has been exceeded are then subject to reporting, regardless of whether or not the toxic chemical concentration later falls to a level below the de minimis exemption.

Supplier Notification. Beginning in 1989, suppliers of facilities in SIC codes 20-39 are required to develop and distribute a notice if the mixtures or trade name products they manufacture or process, and subsequently distribute, contain listed toxic chemicals. These notices are distributed to other companies in SIC codes 20-39 or to companies that sell or otherwise distribute the product to facilities in SIC codes 20-39. If a MSDS is not required for

the mixture or trade name product, the notification must be in written form (i.e., letter). Otherwise, the notice must be incorporated into or attached to the MSDS for that product. The supplier notification requirement began with the first shipment of a product in 1989 and must accompany the first shipment each year thereafter. In addition, a new or revised notice must be sent if a change occurs in the product which affects the weight percent of a listed toxic chemical or if it is discovered that a previous notice did not properly identify the toxic chemicals or the percentage by weight. For more information on supplier notification, see Appendix D.

If listed toxic chemical concentrations are equal to or above the de minimis cut-off level, your supplier must identify the specific components as they appear in Table II and provide their percentage composition by weight in the mixture or product. If your supplier maintains that the identity of a toxic chemical is a trade secret, a generic identity that is structurally descriptive must be supplied on the notice. A maximum concentration level must be provided if your supplier contends that chemical composition information is a trade secret. In either case, you do not need to make a trade secret claim on behalf of your supplier (unless you consider your use of the proprietary mixture a trade secret). On Form R, identify the toxic chemical you are reporting according to its generic name provided in the notification. (See the instructions for Part II, Section 2 for more information.) If the listed toxic chemical is present below the de minimis level, no notification is required.

C. Instructions for Completing EPA Form R

The following are specific instructions for completing each part of EPA Form R. The number designations of the parts and sections of these instructions correspond to those in Form R unless otherwise indicated.

For all parts of Form R:

1. Type or print information on the form in the units and format requested. Use black ink. (Using blue ink for the certification signature is suggested as a means of indicating its originality.)

2. All information on Form R is required.

3. Do not leave items in Parts I and II on Form R blank unless specifically directed to do so; if an item does not apply to you, enter not applicable, NA, in the space provided. If your information does not fill all the spaces provided for a type of information, enter NA, in the next blank space in the sequence.

4. Report releases, off-site transfers, and recycling activities to the nearest pound. Do not report fractions of pounds.

5. Do not submit an incomplete form. The certification statement (Part I) specifies that the report is complete as submitted. See page 1 of these instructions for the definition of a complete submission.

6. When completing additional pages for Part II of the form, number the additional information sequentially from the prior sections of the form.

7. Indicate your TRI Facility Identification Number and the toxic chemical, toxic chemical category, or generically named toxic chemical on which you are reporting in the space provided in the top right corner of each page of Form R. Completion of this non-mandatory data element will greatly aid your internal recordkeeping and the quality of EPA's data entry process.

Part I. Facility Identification Information

Section 1. Reporting Year

This is the calendar year to which the reported information applies, not the year in which you are submitting the report. Information for the 1991 reporting year must be submitted on or before July 1, 1992.

Section 2. Trade Secret Information

2.1 Are you claiming the chemical identity on page 3 trade secret?

Answer this question only after you have completed the rest of the report. The specific identity of the toxic chemical being reported in Part II, Section 1, may be designated as a trade secret. If you are making a trade secret claim, mark "yes" and proceed to Section 2.2. Only check "yes" if it is your manufacturing, processing, or otherwise use of the toxic chemical whose identity is a trade secret. (See page 1 of these instructions for specific information on trade secrecy claims.) If you checked "no," proceed to Section 3; do not answer Section 2.2.

2.2 If "yes" in 2.1, is this copy sanitized or unsanitized?

Answer this question only after you have completed the rest of the report. Check "sanitized" if this copy of the report is the public version which does not contain the toxic chemical identity but does contain a generic name in its place, and you have claimed the toxic chemical identity trade secret in Part I, Section 2.1. Otherwise, check "unsanitized."

Section 3. Certification

The certification statement must be signed by the owner or operator or a senior official with management responsibility for the person (or persons) completing the form. The owner, operator, or official must certify the accuracy and completeness of the information reported on the form by signing and dating the certification statement. Each report must contain an original signature. Print or type in the space provided the name and title of the person who signs the statement. This certification statement applies to all the information supplied on the form and should be signed only after the form has been completed.

Section 4. Facility Identification

4.1 Facility Name and Location

Enter the name of your facility (plant site name or appropriate facility designation), street address, mailing address, city, county, state, and zip code in the space provided. Do not use a post office box number as the street address. The street address provided should be the location where the toxic chemicals are manufactured, processed, or otherwise used. If your mailing address and street address are the same, enter NA in the space for the mailing address.

If you have submitted a Form R for previous reporting years, a TRI Facility Identification Number has been assigned to your facility. The TRI Facility Identification Number appears (with other facility-specific information) on the peel-off mailing label on the cover of this Toxic Chemical Release Inventory Instructions for 1991 (EPA 700-K-92-002). Remove the mailing label from the back of this document and apply it to the space marked "place label here" in Part I, Section 4.1 of the blank Form R.

If your mailing label is missing information required on Form R, insert that information in the appropriate box in Part I, Section 4.1. For example, if your label contains your street address and not your mailing address, enter your mailing address in the space provided.

If you do not have a mailing label or cannot locate your TRI Facility Identification Number, please contact the Emergency Planning and Community Right-to-Know Information Hotline.

Enter "NA" in the space for the TRI Facility Identification number if this is your first submission of a Form R.

4.2 Full or Partial Facility Indication

A covered facility must report all releases and source reduction and recycling activities of a listed toxic chemical if it meets a reporting threshold for that toxic chemical. However, if the facility is composed of several distinct establishments, EPA allows these establishments to submit separate reports for the toxic chemical as long as all releases of the toxic chemical from the entire facility are accounted for. Indicate in Section 4.2 whether your report is for the entire covered facility as a whole or for part of a covered facility. Check box (a) if the toxic chemical information applies to the entire covered facility. Check box (b) if the toxic chemical information applies only to part of a covered facility.

Section 313 requires reports by "facilities," which are defined as "all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person."

The SIC code system defines business "establishments" as "distinct and separate economic activities [that] are performed at a single physical location." Under section 372.30(c) of the reporting rule, you may submit a separate Form R for each establishment, or for groups of establishments in your facility, provided all releases and source reduction and recycling activities involving the toxic chemical from the entire facility are reported. This allows you the option of reporting separately on the activities involving a toxic chemical at each establishment, or group of establishments (e.g., part of a covered facility), rather than submitting a single Form R for that toxic chemical for the entire facility. However, if an establishment or group of establishments does not manufacture, process, or otherwise use or release a toxic chemical, you do not have to submit a report for that establishment or group of establishments. (See also Section B.2.a of these instructions.)

4.3 Technical Contact

Enter the name and telephone number (including area code) of a technical representative whom EPA or State officials may contact for clarification of the information reported on Form R. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility; however, this person must be familiar with the details of the report so that he or she can answer questions about the information provided.

4.4 Public Contact

Enter the name and telephone number (including area code) of a person who can respond to questions from the public about the report. If you choose to designate the same person as both the technical and the public contact, you may enter "Same as Section 4.3" in this space. This contact person does not have to be the same person who prepares the report or signs the certification statement

and does not necessarily need to be someone at the location of the reporting facility. If this space is left blank, the technical contact will be listed as the public contact in the TRI database.

4.5 Standard Industrial Classification (SIC) Code

Enter the appropriate 4-digit primary Standard Industrial Classification (SIC) code for your facility (Table I lists the SIC codes within the 20-39 range). If the report covers more than one establishment, enter the primary 4-digit SIC code for each establishment starting with the primary SIC code for the entire facility. You are required to enter SIC codes only for those establishments within the facility that fall within SIC codes 20 to 39. If you do not know your SIC code, check with your financial office or contact your local Chamber of Commerce or State Department of Labor.

4.6 Latitude and Longitude

Enter the latitudinal and longitudinal coordinates of your facility. Sources of these data include EPA permits (e.g., NPDES permits), county property records, facility blueprints, and site plans. Instructions on how to determine these coordinates can be found in Appendix E. Enter only numerical data. Do not preface numbers with letters such as N or W to denote the hemisphere.

Latitude and longitude coordinates of your facility are very important for pinpointing the location of reporting facilities and are required elements on the Form R. EPA encourages facilities to make the best possible measurements when determining latitude and longitude. As with any other data field, missing, suspect, or incorrect data may generate a Notice of Technical Error to be issued to the facility. (See Appendix C: Common Errors in Completing Form R Reports).

4.7 Dun and Bradstreet Number

Enter the 9-digit number assigned by Dun and Bradstreet (D & B) for your facility or each establishment within your facility. These numbers code the facility for financial purposes. This number may be available from your facility's treasurer or financial officer. You can also obtain the numbers from your local Dun and Bradstreet office (check the telephone book White Pages). If a facility does not subscribe to the D & B service, a "support number" can be obtained from the Dun & Bradstreet center located in Allentown, Pennsylvania, at (215) 882-7748 (8:30 am to 8:00 pm, Eastern Time). If none of your establishments has been assigned a D & B number, enter not applicable, NA, in box (a). If only some of your establishments have been assigned Dun and Bradstreet numbers, enter those numbers in Part I, Section 4.7.

4.8 EPA Identification Number

The EPA I.D. Number is a 12-character number assigned to facilities covered by hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). Facilities not covered by RCRA are not likely to have an assigned I.D. Number. If your facility is not required to have an I.D. Number, enter not applicable, NA, in box (a). If your facility has been assigned EPA Identification Numbers, you must enter those numbers in the spaces provided in Section 4.8.

4.9 NPDES Permit Number

Enter the numbers of any permits your facility holds under the National Pollutant Discharge Elimination System (NPDES) even if the permit(s) do not pertain to the toxic chemical being reported. This 9-character permit number is assigned to your facility by EPA or the State under the authority of the Clean Water Act. If your facility does not have a permit, enter not applicable, NA, in Section 4.9a.

4.10 Underground Injection Well Code (UIC) Identification Number

If your facility has a permit to inject a waste containing the toxic chemical into Class 1 deep wells, enter the 12-digit Underground Injection Well Code (UIC) identification number assigned by EPA or by the State under the authority of the Safe Drinking Water Act. If your facility does not hold such a permit(s), enter not applicable, NA, in Section 4.10a. You are only required to provide the UIC number for wells that receive the toxic chemical being reported.

Section 5. Parent Company Information

You must provide information on your parent company. For purposes of Form R, a parent company is defined as the highest level company, located in the United States, that directly owns at least 50 percent of the voting stock of your company. If your facility is owned by a foreign entity, enter not applicable, NA, in this space. Corporate names should be treated as parent company names for companies with multiple facility sites. For example, the

Bestchem Corporation is not owned or controlled by any other corporation but has sites throughout the country whose names begin with Bestchem. In this case, Bestchem Corporation would be listed as the "parent" company.

5.1 Name of Parent Company

Enter the name of the corporation or other business entity that is your ultimate US parent company. If your facility has no parent company, check the NA box.

5.2 Parent Company's Dun & Bradstreet Number

Enter the Dun and Bradstreet Number for your ultimate US parent company, if applicable. The number may be obtained from the treasurer or financial officer of the company. If your parent company does not have a Dun and Bradstreet number, check the NA box.

Part II Chemical Specific Information

In Part II, you are to report on:

- The toxic chemical being reported;
- The general uses and activities involving the toxic chemical at your facility;
- Releases of the toxic chemical from the facility to air, water, and land;
- Quantities of the toxic chemical transferred to off-site locations;
- Information for on-site waste treatment, energy recovery, and recycling of the toxic chemical; and
- Source reduction activities.

Section 1. Toxic Chemical Identity

1.1 CAS Number

Enter the Chemical Abstracts Service (CAS) registry number in Section 1.1 exactly as it appears in Table II for the chemical being reported. CAS numbers are cross-referenced with an alphabetical list of chemical names in Table II of these instructions. If you are reporting one of the toxic chemical categories in Table II (e.g., chromium compounds), enter the applicable category code in the CAS number space. Toxic chemical category codes are listed below and can also be found in Table II.

Toxic Chemical Category Codes

N010	Antimony compounds
N020	Arsenic compounds
N040	Barium compounds
N050	Berylium compounds
N078	Cadmium compounds
N084	Clorophenols
N090	Chromium compounds
N096	Cobalt compounds
N100	Copper compounds
N106	Cyanide compounds
N230	Glycol ethers
N420	Lead compounds
N450	Manganese compounds
N458	Mercury compounds
N495	Nickel compounds
N575	Polybrominated biphenyls (PBBs)
N725	Selenium compounds
N740	Silver compounds
N760	Thallium compounds
N982	Zinc compounds

If you are making a trade secret claim, you must report the CAS number or category code on your unsanitized Form R and unsanitized substantiation form. Do not include the CAS number or category code on your sanitized Form R or sanitized substantiation form.

1.2 Toxic Chemical or Chemical Category Name

Enter the name of the toxic chemical or chemical category exactly as it appears in Table II. If the toxic chemical name is followed by a synonym in parentheses, report the chemical by the name that directly follows the CAS number (i.e., not the synonym). If the listed toxic chemical identity is actually a product trade name (e.g., dicofol), the 9th *Collective Index* name is listed below it in brackets. You may report either name in this case.

Do not list the name of a chemical that does not appear in Table II, such as individual members of a reportable toxic chemical category. For example, if you use silver nitrate, do not report silver nitrate with its CAS number. Report this chemical as "silver compounds" with its category code, N740.

If you are making a trade secret claim, you must report the specific toxic chemical identity on your unsanitized Form R and unsanitized substantiation form. Do not report the name of the toxic chemical on your sanitized Form R or sanitized substantiation form. Include a generic name in Part II, Section 1.3 of your sanitized Form R report.

EPA requests that the toxic chemical, chemical category, or generic name also be placed in the box marked "Chemical, Category, or Generic Name" in the upper right-hand corner on all pages of Form R. While this space is not a required data element, providing this information will help you in preparing a complete Form R report.

1.3 Generic Chemical Name

Complete Section 1.3 only if you are claiming the specific toxic chemical identity of the toxic chemical as a trade secret and have marked the trade secret block in Part I, Section 2.1 on page 1 of Form R. Enter a generic chemical name that is descriptive of the chemical structure. You must limit the generic name to seventy characters (e.g., numbers, letters, spaces, punctuation) or less. Do not enter mixture names in Section 1.3; see Section 2 below.

In-house plant codes and other substitute names that are not structurally descriptive of the toxic chemical identity being withheld as a trade secret are not acceptable as a generic name. The generic name must appear on both sanitized and unsanitized Form R's, and the name must be the same as that used on your substantiation forms.

Section 2. Mixture Component Identity

Do not complete this section if you have completed Section 1 of Part II. Report the generic name provided to you by your supplier in this section if your supplier is claiming the chemical identity proprietary or trade secret. Do not answer "yes" in Part I, Section 2.1 on page 1 of the form if you complete this section. You do not need to supply trade secret substantiation forms for this toxic chemical because it is your supplier who is claiming the chemical identity a trade secret.

2.1 Generic Chemical Name Provided by Supplier

Enter the generic chemical name in this section only if the following three conditions apply:

1. You determine that the mixture contains a listed toxic chemical but the only identity you have for that chemical is a generic name;

2. You know either the specific concentration of that toxic chemical component or a maximum or average concentration level; and

3. You multiply the concentration level by the total annual amount of the whole mixture processed or otherwise used and determine that you meet the process or otherwise use threshold for that single, generically identified mixture component.

Example 6: Mixture Containing Unidentified Toxic Chemical

Your facility uses 20,000 pounds of a solvent that your supplier has told you contains 80 percent "chlorinated aromatic," their generic name for a toxic chemical subject to reporting under section 313. You therefore know that you have used 16,000 pounds of some listed toxic chemical which exceeds the "otherwise use" threshold. You would file a Form R and enter the name "chlorinated aromatic" in the space provided in Part II, Section 2.

Section 3. Activities and Uses of the Toxic Chemical at the Facility

Indicate whether the toxic chemical is manufactured (including imported), processed, or otherwise used at the facility and the general nature of such activities and uses at the facility during the calendar year. Report activities that take place only at your facility, not activities that take place at other facilities involving your products. You must check all the boxes in this section that apply. If you are a manufacturer of the toxic chemical, you must check (a) and/or (b), and at least one of (c), (d), (e), or (f) in Section 3.1. Refer to the definitions of "manufacture," "process," and "otherwise use" in the general information section of these instructions or Part 40, Section 372.3 of the *Code of Federal Regulations* for additional explanations.

3.1 Manufacture the Toxic Chemical

Persons who manufacture (including import) the toxic chemical must check at least one of the following:

a. *Produce* - the toxic chemical is produced at the facility.

b. *Import* - the toxic chemical is imported by the facility into the Customs Territory of the United States. (See Section B.3.a of these instructions for further clarification of import.)

And check at least one of the following:

c. *For on-site use/processing* - the toxic chemical is produced or imported and then further processed or otherwise used at the same facility. If you check this block, you must also check at least one item in Part II, Section 3.2 or 3.3.

d. *For sale/distribution* - the toxic chemical is produced or imported specifically for sale or distribution outside the manufacturing facility.

e. *As a byproduct* - the toxic chemical is produced coincidentally during the production, processing, otherwise use, or disposal of another chemical substance or mixture and, following its production, is separated from that other chemical substance or mixture. Toxic chemicals produced and released as a result of waste treatment or disposal are also considered byproducts.

f. *As an impurity* - the toxic chemical is produced coincidentally as a result of the manufacture, processing, or otherwise use of another chemical but is not separated and remains primarily in the mixture or product with that other chemical.

3.2 Process the Toxic Chemical (incorporative activities)

a. *As a reactant* - A natural or synthetic toxic chemical used in chemical reactions for the manufacture of another chemical substance or of a product. Includes, but is not limited to, feedstocks, raw materials, intermediates, and initiators.

b. *As a formulation component* - A toxic chemical added to a product (or product mixture) prior to further distribution of the product that acts as a performance enhancer during use of the product. Examples of toxic chemicals used in this capacity include, but are not limited to, additives, dyes, reaction diluents, initiators, solvents, inhibitors, emulsifiers, surfactants, lubricants, flame retardants, and rheological modifiers.

c. *As an article component* - A toxic chemical that becomes an integral component of an article distributed for industrial, trade, or consumer use. One example is the pigment components of paint applied to a chair that is sold.

d. *Repackaging* - Processing or preparation of a toxic chemical (or product mixture) for distribution in commerce in a different form, state, or quantity. This includes, but is not limited to, the transfer of material from a bulk container, such as a tank truck to smaller containers such as cans or bottles.

3.3 Otherwise Use the Toxic Chemical (non-incorporative activities)

a. *As a chemical processing aid* - A toxic chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but is not intended to remain in or become part of the product or product mixture. Examples of such toxic chemicals include, but are not limited to, process solvents, catalysts, inhibitors, initiators, reaction terminators, and solution buffers.

b. *As a manufacturing aid* - A toxic chemical that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another chemical substance. Examples include, but are not limited to, process lubricants, metalworking fluids, coolants, refrigerants, and hydraulic fluids.

c. *Ancillary or other use* - A toxic chemical that is used at a facility for purposes other than aiding chemical processing or manufacturing as described above. Examples include, but are not limited to, cleaners, degreasers, lubricants, fuels, and toxic chemicals used for treating wastes.

Example 7: Activities and Uses of Toxic Chemicals

In the example below, it is assumed that the threshold quantities for manufacture, process, or otherwise use (25,000 pounds, 25,000 pounds, and 10,000 pounds, respectively, for calendar year 1991) have been exceeded and the reporting of listed toxic chemicals is therefore required.

Your facility manufactures sulfuric acid. Fifty percent is sold as a product. The remaining 50 percent is reacted with naphthalene, forming phthalic acid and also producing sulfur dioxide fumes.

- Your company manufactures sulfuric acid, a listed toxic chemical, both for sale/distribution as a commercial product and for on-site use/processing as a feedstock in the phthalic acid production process. Because the sulfuric acid is a reactant, it is also processed. See Figure 3 for how this information would be reported in Part II, Section 3 of Form R.

- Your facility also processes naphthalene, as a reactant to produce phthalic acid, a chemical not on the section 313 list.

Figure 3

SECTION 1. TOXIC CHEMICAL IDENTITY	(Important: DO NOT complete this section if you complete Section 2 below.)
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
	7664-93-9
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
	Sulfuric Acid
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes." Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY	(Important: DO NOT complete this section if you complete Section 1 above.)
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY (Important: Check all that apply.)			
3.1	Manufacture the toxic chemical:	a. ☑ Produce b. ☐ Import	If produce or import: c. ☑ For on-site use/processing d. ☐ For sale/distribution e. ☐ As a byproduct f. ☐ As an impurity
3.2	Process the toxic chemical:	a. ☑ As a reactant b. ☐ As a formulation component	c. ☐ As an article component d. ☐ Repackaging
3.3	Otherwise use the toxic chemical:	a. ☐ As a chemical processing aid b. ☐ As a manufacturing aid	c. ☐ Ancillary or other use

Section 4. Maximum Amount of the Toxic Chemical On-Site at Any Time During the Calendar Year

For data element 4.1 of Part II, insert the code (see below) that indicates the maximum quantity of the toxic chemical (e.g., in storage tanks, process vessels, on-site shipping containers) at your facility at any time during the calendar year. If the toxic chemical was present at several locations within your facility, use the maximum **total** amount present at the entire facility at any one time.

Weight Range in Pounds

Range Code	From...	To....
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999
06	1,000,000	9,999,999
07	10,000,000	49,999,999
08	50,000,000	99,999,999
09	100,000,000	499,999,999
10	500,000,000	999,999,999
11	1 billion	more than 1 billion

If the toxic chemical present at your facility was part of a mixture or trade name product, determine the maximum quantity of the toxic chemical present at the facility by calculating the weight percent of the toxic chemical only.

Do not include the weight of the entire mixture or trade name product. This data may be found in the Tier II form your facility may have prepared under Section 312 of EPCRA. See Part 40, Section 372.30(b) of the *Code of Federal Regulations* for further information on how to calculate the weight of the toxic chemical in the mixture or trade name product. For toxic chemical categories (e.g., nickel compounds), include all chemical compounds in the category when calculating the maximum amount, using the entire weight of each compound.

Section 5. Releases of the Toxic Chemical to the Environment On-Site

In Section 5, you must account for the total aggregate releases of the toxic chemical to the environment from your facility for the calendar year.

Do not enter the values in Section 5 in gallons, tons, liters, or any measure other than pounds. You must also enter the values as whole numbers. Numbers following a decimal point are not acceptable.

Releases to the environment include emissions to the air, discharges to surface waters, and on-site releases to land and underground injection wells. If you have no releases to a particular media (e.g., stack air), you must check the "NA" box or enter zero; **do not** leave any part of Section 5 blank. Check the box on the last line of this section if you use the additional space for Section 5.3 on page 5 of the Form.

You are not required to count, as a release, quantities of a toxic chemical that are lost due to natural weathering or corrosion, normal/natural degradation of a product, or normal migration of a toxic chemical from a product. For example, amounts of a listed toxic chemical that migrate from plastic products in storage do not have to be counted in estimates of releases of that toxic chemical from the facility. Also, amounts of listed metal compounds (e.g., copper compounds) that are lost due to normal corrosion of process equipment do not have to be considered as releases of copper compounds from the facility.

All releases of the toxic chemical to the air must be classified as either a point or non-point emission, and included in the total quantity reported for these releases in Sections 5.1 and 5.2. Instructions for columns A, B, and C follow the discussions of Sections 5.1 through 5.5.

5.1 Fugitive or Non-Point Air Emissions

Report the total of all releases of the toxic chemical to the air that are **not** released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments and spills; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions. Engineering estimates and mass balance calculations (using purchase records, inventories, engineering knowledge or process specifications of the quantity of the toxic chemical entering product, hazardous waste manifests, or monitoring records) may be useful in estimating fugitive emissions.

5.2 Stack or Point Air Emissions

Report the total of all releases of the toxic chemical to the air that occur through stacks, vents, ducts, pipes, or other confined air streams. You must include storage tank emissions. Air releases from air pollution control equipment would generally fall in this category. Monitoring data, engineering estimates, and mass balance calculations may help you to complete this section.

5.3 Discharges to Receiving Streams or Water Bodies

In Section 5.3 you are to enter the name(s) of the stream(s) or water body(ies) to which your facility directly discharges the toxic chemical on which you are reporting. A total of three spaces are provided; however, other streams or water bodies to which the toxic chemical is discharged can be reported in the additional spaces for Section 5.3 found on page 5 of Form R. Enter the name of each receiving stream or surface water body to which the toxic chemical being reported is directly discharged. Report the name of the receiving stream or water body as it appears on the NPDES permit for the facility. If the stream is not covered by a permit, enter the name of the off-site stream or water body by which it is publicly known. Do not list a series of streams through which the toxic chemical flows. Be sure to include the receiving stream(s) or water body(ies) that receive stormwater runoff from your facility. Do not enter names of streams to which off-site treatment plants discharge. Enter "NA" in Section 5.3.1. if you do not discharge the listed toxic chemical to surface water bodies.

Enter the total annual amount of the toxic chemical released from all discharge points at the facility to each receiving stream or water body. Include process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff, if applicable (see instructions for column C below). Do not include discharges to a POTW or other off-site wastewater treatment facilities in this section. These off-site transfers must be reported in Part II, Section 6 of Form R.

Wastewater analyses and flowmeter data may provide the quantities you will need to complete this section.

Discharges of listed acids (e.g., hydrogen fluoride; hydrogen chloride; nitric acid; phosphoric acid; and sulfuric acid) may be reported as zero if the discharges have been neutralized to pH 6 or above. If wastewater containing a listed mineral acid is discharged below pH 6, then releases of the mineral acid must be reported. In this case, pH measurements may be used to estimate the amount of mineral acid released.

If you must report more than three discharges to receiving streams or water bodies, check the box at the bottom of page 4 and enter the additional information on the following page, in Section 5.3, Additional Information on Releases of the Toxic Chemical to the Environment On-Site. In Section 5.3 on page 5, blanks in the data elements are provided so you may continue the numeration you began on page 4.

5.4 Underground Injection On-Site

Enter the total annual amount of the toxic chemical that was injected into all wells, including Class I wells, at the facility. Chemical analyses, injection rate meters, and RCRA Hazardous Waste Generators Reports are good sources for obtaining data that will be useful in completing this section. Check the Not Applicable "NA" box in Section 5.4 if you do not inject the reported toxic chemical into underground wells.

5.5 Releases to Land On-Site

Four predefined subcategories for reporting quantities released to land within the boundaries of the facility are provided. Do not report land disposal at off-site locations in this section. Accident histories and spill records may be useful (e.g., release notification reports required under Section 304 of EPCRA and accident histories required under Section 112(r)(7)(B)(ii) of the Clean Air Act).

5.5.1 Landfill—Typically, the ultimate disposal method for solid wastes is landfilling. Leaks from landfills need not be reported as a release because the amount of the toxic chemical in the landfill has already been reported as a release.

5.5.2 Land treatment/application farming—Land treatment is a disposal method in which a waste containing a listed toxic chemical is applied onto or incorporated into soil. While this disposal method is considered a release to land, any volatilization of listed toxic chemicals into the air occurring during the disposal operation must be included in the total fugitive air releases reported in Part II, Section 5.1 of Form R.

5.5.3 Surface impoundment—A surface impoundment is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials

(although some may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids. Examples of surface impoundments are holding, settling, storage, and elevation pits; ponds; and lagoons. If the pit, pond, or lagoon is intended for storage or holding without discharge, it would be considered to be a surface impoundment used as a final disposal method.

Quantities of the toxic chemical released to surface impoundments that are used merely as part of a wastewater treatment process generally must not be reported in this section. However, if the impoundment accumulates sludges containing the toxic chemical, you must include an estimate in this section unless the sludges are removed and otherwise disposed (in which case they should be reported under the appropriate section of the form). For the purposes of this reporting, storage tanks are not considered to be a type of disposal and are not to be reported in this section of Form R.

5.5.4 Other disposal — Includes any amount of a listed toxic chemical released to land that does not fit the categories of landfills, land treatment, or surface impoundment. This other disposal would include any spills or leaks of listed toxic chemicals to land. For example, 2,000 pounds of benzene leaks from a underground pipeline into the land at a facility. Because the pipe was only a few feet from the surface at the erupt point, 30 percent of the benzene evaporates into the air. The 600 pounds released to the air would be reported as a fugitive air release (Part II, Section 5.1) and the remaining 1,400 pounds would be reported as a release to land, other disposal (Part II, Section 5.5.4).

5.Column A Total Release

Only on-site releases of the toxic chemical to the environment for the calendar year are to be reported in this section of Form R. The total releases from your facility **do not** include transfers or shipments of the toxic chemical from your facility for sale or distribution in commerce, or of wastes to other facilities for waste treatment, recycling, disposal, or energy recovery (see Part II, Section 6 of these Instructions). Both routine releases, such as fugitive air emissions, and accidental or non-routine releases, such as chemical spills, must be included in your estimate of the quantity released. EPA requires no more than two significant digits when reporting releases (e.g., 7,521 pounds would be reported as 7,500 pounds).

Releases of Less Than 1,000 Pounds. For total annual releases or off-site transfers of a toxic chemical from the facility of less than 1,000 pounds, the amount may be reported either as an estimate or by using the range codes that have been developed. The reporting range codes to be used are:

Code	Range (pounds)
A	1-10
B	11-499
C	500-999

Do not enter a range code and an estimate in the same box in column A. Total annual releases or off-site transfers of a toxic chemical from the facility of less than 1 pound may be reported in one of several ways. You should round the value to the nearest pound. If the estimate is 0.5 pounds or greater, you should either enter the range code "A" for "1-10" or enter "1" in column A. If the release is less than 0.5 pounds, you may round to zero and enter "0" in column A.

Note that total annual releases of less than 0.5 pounds from the processing or otherwise use of an article maintain the article status of that item. Thus, if the only releases you have are from processing an article, and such releases are less than 0.5 pounds per year, you are not required to submit a report for that toxic chemical. The 0.5-pound release determination does not apply to just a single article. It applies to the cumulative releases from the processing or otherwise use of the same type of article (e.g., sheet metal or plastic film) that occurs over the course of the calendar year.

Zero Releases. If you have no releases of a toxic chemical to a particular medium, report either NA, not applicable, or 0, as appropriate. Report NA only when there is no possibility a release could have occurred to a specific media or off-site location. If a release to a specific media or off-site location could have occurred, but either did not occur or the annual aggregate release was less than 0.5 pounds, report zero. However, if you report zero releases, a basis of estimate must be provided in column B.

For example, if hydrochloric acid is involved in the facility's processing activities but the facility neutralizes the wastes to a pH of 6 or above, then the facility reports a 0 release for the toxic chemical. If the facility has no underground injection well, "NA" would be written in Part I, Section 4.10 and checked in Part II, Section 5.4 of Form R. Also, if the facility does not landfill the acidic waste, NA would be checked in Part II, Section 5.5.1 of Form R.

Releases of 1,000 Pounds or More. For releases to any medium that amount to 1,000 pounds or more for the year, you must provide an estimate in pounds per year in column A. Any estimate provided in column A should be reported to no more than two significant figures. This estimate should be in whole numbers. Do not use decimal points.

Calculating Releases. To provide the release information required in column A in this section, you must use all readily available data (including relevant monitoring data and emissions measurements) collected at your facility to meet other regulatory requirements or as part of routine plant operations, to the extent you have such data for the toxic chemical.

When relevant monitoring data or emission measurements are not readily available, reasonable estimates of the amounts released must be made using published emission factors, material balance calculations, or engineering calculations. You may not use emission factors or calculations to estimate releases if more accurate data are available.

No additional monitoring or measurement of the quantities or concentrations of any toxic chemical released into the environment, or of the frequency of such releases, beyond that which is required under other provisions of law or regulation or as part of routine plant operations, is required for the purpose of completing Form R.

You must estimate, as accurately as possible, the quantity (in pounds) of the toxic chemical or chemical category that is released annually to each environmental medium. Include only the quantity of the toxic chemical in this estimate. If the toxic chemical present at your facility was part of a mixture or trade name product, calculate only the releases of the toxic chemical, not the other components of the mixture or trade name product. If you are only able to estimate the releases of the mixture or trade name product as a whole, you must assume that the release of the toxic chemical is proportional to its concentration in the mixture or trade name product. See Part 40, Section 372.30(b) of the *Code of Federal Regulations* for further information on how to calculate the concentration and weight of the toxic chemical in the mixture or trade name product.

If you are reporting a toxic chemical category listed in Table II of these instructions rather than a specific toxic chemical, you must combine the release data for all chemicals in the listed toxic chemical category (e.g., all glycol ethers or all chlorophenols) and report the aggregate amount for that toxic chemical category. Do not report releases of each individual toxic chemical in that category separately. For example, if your facility releases 3,000 pounds per year of 2-chlorophenol, 4,000 pounds per year of 3-chlorophenol, and 4,000 pounds per year of 4-chlorophenol to air as fugitive emissions, you should report that your facility releases 11,000 pounds per year of chlorophenols to air as fugitive emissions in Part II, Section 5.1.

For listed toxic chemicals with the qualifier "solution," such as ammonium nitrate, at concentrations of 1 percent (or 0.1 percent in the case of a carcinogen) or greater, the chemical concentrations must be factored into threshold and release calculations because threshold and release amounts relate to the amount of toxic chemical in solution, not the amount of solution.

For metal compound categories (e.g., chromium compounds), report releases of only the parent metal. For example, a user of various inorganic chromium salts would report the total chromium released regardless of the chemical form (e.g., as the original salts, chromium ion, oxide) and exclude any contribution to mass made by other species in the molecule.

5.Column B Basis of Estimate

For each release estimate, you are required to indicate the principal method used to determine the amount of release reported. You will enter a letter code that identifies the method that applies to the largest portion of the total estimated release quantity.

The codes are as follows:

M- Estimate is based on monitoring data or measurements for the toxic chemical as transferred to an off-site facility.

C- Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in wastes entering and leaving process equipment.

E- Estimate is based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emission factors).

Example 8: Calculating Releases

Your facility disposes of 14,000 pounds of lead chromate (PbCrO4.PbO) in an on-site landfill and transfers 16,000 pounds of lead selenite (PbSeO4) to an off-site land disposal facility. You would therefore be submitting three separate reports on the following: lead compounds, selenium compounds, and chromium compounds. However, the quantities you would be reporting would be the pounds of "parent" metal being released or transferred off-site. All quantities are based on mass balance calculations (See Section 5.B for information on Basis of Estimate and Section 6.C for waste treatment or disposal codes and information on transfers of toxic chemicals in wastes). You would calculate releases of lead, chromium, and selenium by first determining the percentage by weight of these metals in the materials you use as follows:

Lead Chromate (PbCrO4.PbO) - Molecular weight = 546.37

Lead 2 Pb - Molecular weight = 207.2 x 2 = 414.4

Chromate 1 Cr - Molecular weight = 51.996

Lead chromate is therefore (% by weight)

(414.4/546.37) = 75.85% lead and
(51.996/546.37) = 9.52% chromium

Lead Selenite (PbSeO4) Molecular weight = 350.17

Lead 1 Pb Molecular weight = 207.2

Selenium 1 Se Molecular weight = 78.96

Lead selenite is therefore (% by weight)

(207.2/350.17) = 59.17% lead and
(78.96/350.17) = 22.55% selenium.

The total pounds of lead, chromium, and selenium released or transferred from your facility are as follows:

Lead

Release: 0.7585 x 14,000 = 10,619 pounds from lead chromate (round to 11,000 pounds)

Transfer: 0.5917 x 16,000 = 9,467 pounds from lead selenite (round to 9,500 pounds)

Chromium

Release: 0.0952 x 14,000 = 1,333 pounds from lead chromate (round to 1,300 pounds)

Selenium

Transfer: 0.2255 x 16,000 = 3,608 pounds of selenium from lead round to 3,600 pounds)

O- Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a treatment, even if the composition of the waste before treatment was fully identified through monitoring data.

For example, if 40 percent of stack emissions of the reported toxic chemical were derived using monitoring data, 30 percent by mass balance, and 30 percent by emission factors, you would enter the code letter "M" for monitoring.

If the monitoring data, mass balance, or emission factor used to estimate the release is not specific to the toxic chemical being reported, the form should identify the estimate as based on engineering calculations or best engineering judgment.

If a mass balance calculation yields the flow rate of a waste, but the quantity of reported toxic chemical in the waste is based on solubility data, report "O" because "engineering calculations" were used as the basis of estimate of the quantity of the toxic chemical in the waste.

If the concentration of the toxic chemical in the waste was measured by monitoring equipment and the flow rate of the waste was determined by mass balance, then the primary basis of the estimate is "monitoring" (M). Even though a mass balance calculation also contributed to the estimate, "monitoring" should be indicated because monitoring data was used to estimate the concentration of the waste.

Mass balance (C) should only be indicated if it is directly used to calculate the mass (weight) of toxic chemical released. Monitoring data should be indicated as the basis of estimate only if the toxic chemical concentration is measured in the waste being released into the environment. Monitoring data should not be indicated, for example, if the monitoring data relates to a concentration of the toxic chemical in other process streams within the facility.

It is important to realize that the accuracy and proficiency of release estimation will improve over time. However, submitters are not required to use new emission factors or estimation techniques to revise previous Form R submissions.

5.Column C Percent From Stormwater

This column relates only to Section 5.3 — discharges to receiving streams or water bodies. If your facility has monitoring data on the amount of the toxic chemical in stormwater runoff (including unchanneled runoff), you must include that quantity of the toxic chemical in your water release in column A and indicate the percentage of the total quantity (by weight) of the toxic chemical contributed by stormwater in column C (Section 5.3C).

If your facility has monitoring data on the toxic chemical and an estimate of flow rate, you must use this data to determine the percent stormwater.

If you have monitored stormwater but did not detect the toxic chemical, enter zero (0) in column C. If your facility has no stormwater monitoring data for the chemical, enter not applicable, "NA," in this space on the form.

If your facility does not have periodic measurements of stormwater releases of the toxic chemical, but has submitted chemical-specific monitoring data in permit applications, then these data must be used to calculate the percent contribution from stormwater. Rates of flow can be estimated by multiplying the annual amount of rainfall by the land area of the facility and then multiplying that figure by the runoff coefficient. The runoff coefficient represents the fraction of rainfall that does not seep into the ground but runs off as stormwater. The runoff coefficient is directly related to how the land in the drainage area is used. (See table below.)

Description of Land Area	Runoff Coefficient
Business	
Downtown areas	0.70-0.95
Neighborhood areas	0.50-0.70
Industrial	
Light areas	0.50-0.80
Heavy areas	0.60-0.90
Railroad yard areas	0.20-0.40
Unimproved areas	0.10-0.30
Streets	
Asphaltic	0.70-0.95
Concrete	0.80-0.95
Brick	0.70-0.85
Drives and walks	0.70-0.85
Roofs	0.75-0.95
Lawns: Sandy Soil	
Flat, 2%	0.05-0.10
Average, 2-7%	0.10-0.15
Steep, 7%	0.15-0.20

Example 9: Releases from Stormwater

Your stormwater monitoring data shows that the average concentration of zinc in the stormwater runoff from your facility from a biocide containing a zinc compound is 1.4 milligrams per liter, and the total annual stormwater discharge from the facility is 7.527 million gallons. The total amount of zinc discharged to surface water through the plant wastewater discharge (non-stormwater) is 250 pounds per year. The total amount of zinc discharged with stormwater is:

(7,527,000 gallons stormwater) x (3.785 liters/gallon) = 28,489,695 liters stormwater

(28,489,695 liters stormwater) x (1.4 mg. zinc/liter) = 39,885.6 grams zinc = 88 pounds zinc

The total amount of zinc discharged from all sources of your facility is:

250 pounds zinc from wastewater discharge
+ 88 pounds zinc from stormwater runoff
338 pounds zinc total water discharge

Round to 340 pounds of zinc on Form R.

The percentage of zinc discharged through stormwater is:

88/338 x 100 = 26%

Lawns: Heavy Soil	
Flat, 2%	0.13-0.17
Average, 2-7%	0.18-0.22
Steep, 7%	0.25-0.35

Choose the most appropriate runoff coefficient for your site or calculate a weighted-average coefficient, which takes into account different types of land use at your facility:

Weighted-average runoff coefficient =
(Area 1 % of total)(C1) + (Area 2 % of total)(C2) +
(Area 3 % of total)(C3) + ... + (Area i % of total)(Ci)

where Ci = runoff coefficient for a specific land use of Area i.

Section 6 Transfers of the Toxic Chemical in Wastes to Off-Site Locations

You must report in this section the total annual quantity of the toxic chemical in wastes sent to any off-site facility for the purposes of waste treatment, disposal, recycling, or energy recovery. **Note that beginning with reporting year 1991, off-site transfers for the purposes of recycling and energy recovery are required to be reported.** Report the total amount of the toxic chemical transferred off-site after any on-site waste treatment, recycling, or removal is completed. Do not report transfers of listed mineral acids if they have been neutralized to a pH of 6 or above prior to discharge to a Publicly Owned Treatment Works (POTW).

If you do not discharge wastewater containing the reported toxic chemical to a POTW, enter not applicable, NA, in the box for the POTW's name in Section 6.1.B._. If you do not ship or transfer wastes containing the reported toxic chemical to other off-site locations, enter not applicable, NA, in the box for the off-site location's EPA Identification Number in Section 6.2._.

Important: Beginning with the 1991 reporting year, you must number the boxes for reporting the information for each POTW or other off-site location in Sections 6.1 and 6.2. In the upper left hand corner of each box, the section number is either 6.1.B._ or 6.2._.

If you report a transfer of the listed toxic chemical to one or more POTW, number the boxes in Section 6.1.B as 6.1.B.1, 6.1.B.2, etc. If you transfer the listed toxic chemical to more than two POTWs, photocopy page 5 of Form R as many times as necessary and then number the boxes consecutively for each POTW. At the bottom of page 5 you will find instructions for indicating the total number of page 5s that you are submitting as part of Form R, as well as indicating the sequence of those pages. For

Example 10: Stormwater Runoff

Your facility is located in a semi-arid region of the United States which has an annual precipitation (including snowfall) of 12 inches of rain. (Snowfall should be converted to the equivalent inches of rain; assume one foot of snow is equivalent to one inch of rain.) The total area covered by your facility is 42 acres (about 170,000 square meters or 1,829,520 square feet). The area of your facility is 50 percent unimproved area, 10 percent asphaltic streets, and 40 percent concrete pavement.

The total stormwater runoff from your facility is therefore calculated as follows:

Land Use	% Total Area	Runoff Coefficient
Unimproved area	50	0.20
Asphaltic streets	10	0.85
Concrete pavement	40	0.90

Weighted-average runoff coefficient = (50%) x (0.20) + (10%) x (0.85) + (40%) x (0.90) = 0.545

(Rainfall) x (land area) x (conversion factor) x (runoff coefficient) = stormwater runoff

(1 foot) x (1,829,520 ft^2) x (7.48 gal/ft^3) x (0.545) = 7,458,221 gallons/year

Total stormwater runoff = 7.45 million gallons/year

example, your facility transfers the reported toxic chemical in wastewaters to three POTWs. You would photocopy page 5 once, indicate at the bottom of each page 5 that there are a total of two page 5s and then indicate the first and second page 5. The boxes for the two POTWs on the first page 5 would be numbered 6.1.B.1 and 6.1.B.2, while the box for the third POTW on the second page 5 would be numbered 6.1.B.3.

If you report a transfer of the listed toxic chemical to one or more other off-site locations, number the boxes in Section 6.2 as 6.2.1, 6.2.2, etc. If you transfer the listed toxic chemical to more than two other off-site locations, photocopy page 6 of Form R as many times as necessary and then number the boxes consecutively for each off-site location. At the bottom of page 6 you will find instructions for indicating the total number of page 6s that you are submitting as part of Form R as well as indicating the sequence of those pages. For example, your facility transfers the reported toxic chemical to three other off-site locations. You would photocopy page 6 once, indicate at the bottom of each page 6 that there are a total of two page 6s and then indicate the first and second page 6. The boxes for the two off-site locations on the first page 6 would be numbered 6.2.1 and 6.2.2, while the box for the third off-site location on the second page 6 would be numbered 6.2.3.

6.1 Discharges to Publicly Owned Treatment Works (POTW)

In Section 6.1.A, estimate the quantity of the reported toxic chemical transferred to all POTWs and the basis upon which the estimate was made. In Section 6.1.B, enter the name and address for each POTW to which your facility discharges wastewater containing the reported toxic chemical.

If you do not discharge wastewater containing the reported toxic chemical to a POTW, enter not applicable, NA, in the box for the POTW's name in Section 6.1.B._.

6.1.A.1 Total Transfers

Enter the total amount, in pounds, of the reported toxic chemical that is contained in the wastewaters transferred to all POTWs. Do not enter the total poundage of the wastewaters. If the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code. The following reporting range codes are to be used:

Code	Reporting Range (in pounds)
A	1-10
B	11-499
C	500-99

6.1.A.2 Basis of Estimate

You must identify the basis for your estimate of the total quantity of the reported toxic chemical in the wastewaters transferred to all POTWs. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

M- Estimate is based on monitoring data or measurements for the toxic chemical as transferred to an off-site facility.

C- Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in streams entering and leaving process equipment.

E- Estimate is based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emission factors).

O- Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.

If you transfer a toxic chemical to more than one POTW, you should report the basis of estimate that was used to determine the largest percentage of the toxic chemical that was transferred.

6.2 Transfers to Other Off-Site Locations

In Section 6.2, enter the EPA Identification Number, name, and address for each off-site location to which your facility ships or transfers wastes containing the reported toxic chemical for the purposes of waste treatment, disposal, recycling, or energy recovery. Also estimate the quantity of the reported toxic chemical transferred and the basis upon which the estimate was made. If appropriate, you must report multiple activities (up to four) for each off-site location. For example, if your facility sends a reported toxic chemical in wastes to an off-site location where some of the toxic chemical is to be recycled while the remainder of the quantity transferred is to be treated, you must report both the waste treatment and recycle activities, along with the quantity associated with each activity.

If you do not ship or transfer wastes containing the reported toxic chemical to other off-site locations, enter not applicable, NA, in the box for the off-site location's EPA Identification Number in Section 6.2._. The EPA Identification Number (defined in 40 CFR 260.10 and therefore commonly referred to as the RCRA ID Number) may be found on the Uniform Hazardous Waste Manifest, which is required by RCRA regulations. If you ship or transfer wastes containing a toxic chemical and the off-site location does not have an EPA Identification Number (e.g., it does not accept RCRA hazardous wastes or the wastes in question are not classified as hazardous), enter NA in the box for the off-site location EPA Identification Number. If you ship or transfer the reported toxic chemical in wastes to another country, enter the Federal Information Processing Standards (FIPS) code for that country in the county field of the address for the off-site facility. The most commonly used FIPS codes are listed below.

The following is an abridged list of countires to which a U.S. facility might ship a listed toxic chemical. For a complete listing of FIPS codes, consult your local library.

Country	Code
Argentina	AR
Belgium	BE
Bolivia	BL
Brazil	BR
Canada	CA
Chile	CI
Columbia	CO
Costa Rica	CS
Cuba	CU
Ecuador	EC
El Salvador	ES
France	FR
Guatemala	GT
Honduras	HO
Ireland	EI
Italy	IT
Mexico	MX
Nicaragua	NU
Panama	PM
Paraguay	PA
Peru	PE

Country	Code
Portugal	PO
Puerto Rico	RQ
Spain	SP
Switzerland	SZ
United Kingdom	UK
Uruguay	UY
Venezuela	VE

You must distinguish between incineration, which is always considered waste treatment, and combustion where energy is actually recovered. When the reported toxic chemical has a significant heat of combustion value, and is transferred to an off-site location for combustion in an industrial kiln, furnace, or boiler, report the quantity as used for the purposes of energy recovery. However, toxic chemicals with little or no heat of combustion value (e.g., metals, chlorofluorocarbons) must be reported as treated.

6.2 column A Total Transfers

For each off-site location, enter the total amount, in pounds, of the toxic chemical that is contained in the waste transferred to that location. Do not enter the total poundage of the waste. If the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code. The following reporting range codes are to be used:

Code	Reporting Range (in pounds)
A	1-10
B	11-499
C	500-999

If you transfer the toxic chemical in wastes to an off-site facility for distinct and multiple purposes, you must report those activities (up to four) for each off-site location, along with the quantity of the reported toxic chemical associated with each activity. For example, your facility transfers a total of 15,000 pounds of toluene to an off-site location that will use 5,000 pounds for the purposes of energy recovery, enter 7,500 pounds into a recovery process, and dispose of the remaining 2,500 pounds. These quantities and the associated activity codes must be reported separately in Section 6.2. (See Figure 4 for a hypothetical Section 6.2 completed for two off-site locations, one of which receives the transfer of 15,000 pounds of toluene as detailed.) If more than four activities are performed on distinct quantities at the off-site location, list the predominant four activities but still report all quantities sent to the off-site location.

Do not double or multiple count amounts transferred off-site. For example, when a reported toxic chemical is sent to an off-site facility for sequential activities and the specific quantities associated with each activity are unknown, report only a single quantity (the total quantity transferred to the off-site location) along with a single activity code. In such a case, report the activity applied to the majority of the reported toxic chemical sent off-site, not the ultimate disposition of the toxic chemical. For example, when a toxic chemical is first treated and then recovered with the majority of the toxic chemical being treated and only a fraction subsequently recovered, report the appropriate waste treatment activity along with the quantity.

6.2 column B Basis of Estimate

You must identify the basis for your estimates of the quantities of the reported toxic chemical in wastes transferred to each off-site location. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

M - Estimate is based on monitoring data or measurements for the toxic chemical as transferred to an off-site facility.

C - Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in wastes entering and leaving process equipment.

E - Estimate is based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emission factors).

O - Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a treatment, even if the composition of the waste before treatment was fully identified through monitoring data.

6.2 column C Type of Waste Treatment/Disposal/Recycling/Energy Recovery

Enter one of the following codes to identify the type of waste treatment, disposal, recycling or energy recovery methods used by the off-site location for the reported toxic chemical. You must use more than one line and

Figure 4
Hypothetical Section 6.2 Completed for Two Off-site Locations

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS		
6.2. 1 Off-site EPA Identification Number (RCRA ID No.): COD 566162461		
Off-Site Location Name: Acme Waste Services		
Street Address: 5 Market Street		
City: Releaseville	County: Hill	
State: CO Zip Code: 80461	Is location under control of reporting facility or parent company? ☐ Yes ☒ No	
A. Total Transfers (pounds/year) (enter range code or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1. 5,000	1. O	1. M 56
2. 7,500	2. C	2. M 20
3. 2,500	3. O	3. M 72
4. NA	4.	4. M

This off-site location receives a transfer of 15,000 pounds of toluene (as discussed earlier) and will combust 5,000 pounds for the purposes of energy recovery, enter 7,500 pounds into a recovery process, and dispose of the remaining 2,500 pounds.

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS		
6.2. 2 Off-site EPA Identification Number (RCRA ID No.): COD 61772543		
Off-Site Location Name: Combustion, Inc.		
Street Address: 25 Facility Road		
City: Dumfry	County: Burns	
State: CO Zip Code: 80500	Is location under control of reporting facility or parent company? ☐ Yes ☒ No	
A. Total Transfers (pounds/year) (enter range code or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1. 12,500	1. O	1. M 54
2. NA	2.	2. M
3.	3.	3. M
4.	4.	4. M

This off-site location receives a transfer of 12,500 pounds of tetrachloroethylene (perchloroethylene) that is part of a waste that is combusted for the purposes of energy recovery in an industrial furnace. Note that the perchloroethylene is reported using code M54 to indicate that it is combusted in an energy recovery unit but it does not contribute to the heating value of the waste.

code for a single location when distinct quantities of the reported toxic chemical are subject to different waste treatment, disposal, recycling, or energy recovery methods. You may have this information in your copy of EPA Form SO, Item S of the Annual/Biennial Hazardous Waste Treatment, Storage, and Disposal Report (RCRA), or in your invoices from the waste service(s) or broker(s) receiving your wastes for the purposes of waste treatment, disposal, recycling, or energy recovery.

You must distinguish between incineration, which is waste treatment, and legitimate energy recovery. In order for you to claim that a reported toxic chemical sent off-site is used for the purposes of energy recovery and not for waste treatment, the toxic chemical must have a heating value high enough to sustain combustion and must be combusted in an energy recovery unit such as an industrial boiler, furnace, or kiln. In a situation where the reported toxic chemical is in a waste that is combusted in an energy recovery unit, but the toxic chemical does not have a heating value high enough to sustain combustion, use code M54, Incineration/Insignificant Fuel Value, to indicate that the toxic chemical was incinerated in an energy recovery unit but did not contribute to the heating value of the waste (see Figure 4 for an example).

Applicable codes for Part II, Section 6.2, column C are:

Disposal

M10 Storage Only
M71 Underground Injection
M72 Landfill/Disposal Surface Impoundment
M73 Land Treatment
M79 Other Land Disposal
M94 Transfer to Waste Broker—Disposal

Recycling

M20 Solvents/Organics Recovery
M24 Metals Recovery
M26 Other Reuse or Recovery
M28 Acid Regeneration
M93 Transfer to Waste Broker—Recycling

Waste Treatment

M40 Solidification/Stabilization
M50 Incineration/Thermal Treatment
M54 Incineration/Insignificant Fuel Value
M61 Wastewater Treatment (Excluding POTW)
M69 Other Waste Treatment
M95 Transfer to Waste Broker—Waste Treatment

Energy Recovery

M56 Energy Recovery
M92 Transfer to Waste Broker—Energy Recovery

Section 7 On-Site Waste Treatment, Energy Recovery and Recycling Methods

You must report in this section the methods of waste treatment, energy recovery, and recycling applied to the reported toxic chemical in wastes on-site. There are three separate sections for reporting such activities.

Section 7A On-Site Waste Treatment Methods and Efficiency

In Section 7A, you must provide the following information if you treat the reported toxic chemical on-site:

(a) the general waste stream types containing the toxic chemical being reported;
(b) the waste treatment method(s) or sequence used on all waste streams containing the toxic chemical;
(c) the range of concentration of the toxic chemical in the influent to the waste treatment method;
(d) the efficiency of each waste treatment method or waste treatment sequence in removing the toxic chemical; and
(e) whether the waste treatment efficiency figure was based on actual operating data.

Use a separate line in Section 7A for each general waste stream type. Report only information about treatment of waste streams at your facility, not information about off-site waste treatment.

If you do not perform on-site treatment of waste streams containing the reported toxic chemical, check the Not Applicable (NA) box at the top of Section 7A.

7A column a General Waste Stream

For each waste treatment method, indicate the type of waste stream containing the toxic chemical that is treated. Enter the letter code that corresponds to the general waste stream type:

A Gaseous (gases, vapors, airborne particulates)
W Wastewater (aqueous waste)
L Liquid waste streams (non-aqueous waste)
S Solid waste streams (including sludges and slurries)

If a waste is a mixture of water and organic liquid and the organic content is less than 50 percent, report it as a wastewater (W). Slurries and sludges containing water must be reported as solid waste if they contain appreciable amounts of dissolved solids, or solids that may settle, such that the viscosity or density of the waste is considerably different from that of process wastewater.

7A column b Waste Treatment Method(s) Sequence

Enter the appropriate code from the list below for each on-site waste treatment method used on a waste stream containing the toxic chemical, regardless of whether the waste treatment method actually removes the specific toxic chemical being reported. Waste treatment methods must be reported for each type of waste stream being treated (i.e., gaseous waste streams, aqueous waste streams, liquid non-aqueous waste streams, and solids). Except for the air emission treatment codes, the waste treatment codes are not restricted to any medium.

Waste streams containing the toxic chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your facility may be combined prior to waste treatment. Report waste treatment methods that apply to the aggregate waste stream, as well as waste treatment methods that apply to individual waste streams. If your facility treats various wastewater streams containing the toxic chemical in different ways, the different waste treatment methods must be listed separately.

If your facility has several pieces of equipment performing a similar service in a waste treatment sequence, you may combine the reporting for such equipment. It is not necessary to enter four codes to cover four scrubber units, for example, if all four are treating waste streams of similar character (e.g., sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differs from one unit to the next, each scrubber must be listed separately.

If your facility performs more than eight sequential waste treatment methods on a single general waste stream, continue listing the methods in the next row and renumber appropriately those waste treatment method code boxes you used to continue the sequence. For example, if the general waste stream in box 7A.1a had nine treatment methods applied to it, the ninth method would be indicated in the first method box for row 7A.2a. The numeral "1" would be crossed out, and a "9" would be inserted. Treatment applied to any other general waste stream types would then be listed in the next empty row. In the scenario above, for instance, the second general waste stream would be reported in row 7A.3a. See Figure 5 below for an example of a hypothetical Section 7A completed for a nine-step waste treatment process and a single waste treatment method.

If you need additional space to report under Section 7A, photocopy page 7 of Form R as many times as necessary. At the bottom of page 7 you will find instructions for indicating the total number of page 7s that you are submitting as part of Form R, as well as instructions for indicating the sequence of those pages.

Waste Treatment Codes

Air Emissions Treatment (applicable to gaseous waste streams only)

A01	Flare
A02	Condenser
A03	Scrubber
A04	Absorber
A05	Electrostatic Precipitator
A06	Mechanical Separation
A07	Other Air Emission Treatment

Biological Treatment

B11	Biological Treatment — Aerobic
B21	Biological Treatment — Anaerobic
B31	Biological Treatment — Facultative
B99	Biological Treatment — Other

Chemical Treatment

C01	Chemical Precipitation — Lime or Sodium Hydroxide
C02	Chemical Precipitation — Sulfide
C09	Chemical Precipitation — Other
C11	Neutralization
C21	Chromium Reduction
C31	Complexed Metals Treatment (other than pH Adjustment)
C41	Cyanide Oxidation — Alkaline Chlorination
C42	Cyanide Oxidation — Electrochemical
C43	Cyanide Oxidation — Other
C44	General Oxidation (including Disinfection) — Chlorination
C45	General Oxidation (including Disinfection) — Ozonation

Figure 5
Hypothetical Section 7A

SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY

☐ Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	c. Range of Influent Concentration	d. Waste Treatment Efficiency Estimate	e. Based on Operating Data?
7A.1a	7A.1b: 1 P12, 2 P18, 3 P17, 4 P61, 5 P42, 6 P21, 7 B21, 8 P11	7A.1c	7A.1d	7A.1e
W		A	%	Yes ☐ No ☐
7A.2a	7A.2b: 1 C44, 2, 3, 4, 5, 6, 7, 8	7A.2c	7A.2d	7A.2e
			99 %	Yes ☒ No ☐
7A.3a	7A.3b: 1 A01, 2, 3, 4, 5, 6, 7, 8	7A.3c	7A.3d	7A.3e
A		A	91 %	Yes ☒ No ☐

C46 General Oxidation (including Disinfection) — Other
C99 Other Chemical Treatment

Incineration/Thermal Treatment

F01 Liquid Injection
F11 Rotary Kiln with Liquid Injection Unit
F19 Other Rotary Kiln
F31 Two Stage
F41 Fixed Hearth
F42 Multiple Hearth
F51 Fluidized Bed
F61 Infra-Red
F71 Fume/Vapor
F81 Pyrolytic Destructor
F82 Wet Air Oxidation
F83 Thermal Drying/Dewatering
F99 Other Incineration/Thermal Treatment

Physical Treatment

P01 Equalization
P09 Other Blending
P11 Settling/Clarification
P12 Filtration
P13 Sludge Dewatering (non-thermal)
P14 Air Flotation
P15 Oil Skimming
P16 Emulsion Breaking — Thermal
P17 Emulsion Breaking — Chemical
P18 Emulsion Breaking — Other
P19 Other Liquid Phase Separation
P21 Adsorption — Carbon
P22 Adsorption — Ion Exchange (other than for recovery/reuse)
P23 Adsorption — Resin
P29 Adsorption — Other
P31 Reverse Osmosis (other than for recovery/reuse)
P41 Stripping — Air
P42 Stripping — Steam
P49 Stripping — Other
P51 Acid Leaching (other than for recovery/reuse)
P61 Solvent Extraction (other than recovery/reuse)
P99 Other Physical Treatment

Solidification/Stabilization

G01 Cement Processes (including Silicates)
G09 Other Pozzolonic Processes (including Silicates)
G11 Asphaltic Processes
G21 Thermoplastic Techniques
G99 Other Solidification Processes

7A column c Range of Influent Concentration

The form requires an indication of the range of concentration of the toxic chemical in the waste stream (i.e., the influent) as it typically enters the waste treatment step or sequence. The concentration is based on the amount or mass of the toxic chemical in the waste stream as compared to the total amount or mass of the waste stream. Enter in the space provided one of the following code numbers corresponding to the concentration of the toxic chemical in the influent:

1 = Greater than 1 percent
2 = 100 parts per million (0.01 percent) to 1 percent (10,000 parts per million)
3 = 1 part per million to 100 parts per million
4 = 1 part per billion to 1 part per million
5 = Less than 1 part per billion

Note: Parts per million (ppm) is:

- milligrams/kilogram (mass/mass) for solids and liquids;
- cubic centimeters/cubic meter (volume/volume) for gases;
- milligrams/liter for solutions or dispersions of the chemical in water; and
- milligrams of chemical/kilogram of air for particulates in air.

If you have particulate concentrations (at standard temperature and pressure) as grains/cubic foot of air, multiply by 1766.6 to convert to parts per million; if in milligrams/cubic meter, multiply by 0.773 to obtain parts per million. These conversion factors are for standard conditions of 0°C (32°F) and 760 mmHg atmospheric pressure.

7A column d Waste Treatment Efficiency Estimate

In the space provided, enter the number indicating the percentage of the toxic chemical removed from the waste stream through destruction, biological degradation, chemical conversion, or physical removal. The waste treatment efficiency (expressed as percent removal) represents the percentage of the toxic chemical destroyed or removed (based on amount or mass), not merely changes in volume or concentration of the toxic chemical in the waste stream. The efficiency, which can reflect the overall removal from sequential treatment methods applied to the general waste stream, refers only to the percent destruction, degradation, conversion, or removal of the listed toxic chemical from the waste stream, not the percent conversion or removal of other constituents in the waste stream. The efficiency also does not refer to the general efficiency of the treatment method for any waste stream. For some waste treatment methods, the percent removal will represent removal by several mechanisms, as in an aeration basin, where a toxic chemical may evaporate, be biodegraded, or be physically removed from the sludge.

Percent removal can be calculated as follows:

$$\frac{(I - E)}{I} \times 100, \text{ where}$$

I = amount of the toxic chemical in the influent waste stream (entering the waste treatment step or sequence) and
E = amount of the toxic chemical in the effluent waste stream (exiting the waste treatment step or sequence).

Calculate the amount of the toxic chemical in the influent waste stream by multiplying the concentration (by weight) of the toxic chemical in the waste stream by the total amount or weight of the waste stream. In most cases, the percent removal compares the treated effluent to the influent for the particular type of waste stream. For solidification of wastewater, the waste treatment efficiency can be reported as 100 percent if no volatile toxic chemicals were removed with the water or evaporated into the air. Percent removal does not apply to incineration because the waste stream, such as wastewater or liquids, may not exist in a comparable form after waste treatment and the purpose of incineration as a waste treatment is to destroy the toxic chemical by converting it to carbon dioxide and water. In cases where the toxic chemical is incinerated, the percent efficiency must be based on the amount of the toxic chemical destroyed or combusted, except for metals or metal compounds. In the cases where a metal or metal compound is incinerated, the efficiency is always zero for the parent metal.

Similarly, an efficiency of zero must be reported for any waste treatment method(s) (e.g., evaporation) that does not destroy, chemically convert, or physically remove the toxic chemical from the waste stream.

For metal compounds, the calculation of the reportable concentration and waste treatment efficiency must be based on the weight of the parent metal, not on the weight of the metal compounds. Metals are not destroyed, only physically removed or chemically converted from one form into another. The waste treatment efficiency reported must represent only physical removal of the parent metal from the waste stream (except for incineration), not the percent chemical conversion of the metal compound. If a listed waste treatment method converts but does not remove a metal (e.g., chromium reduction), the method must be reported with a waste treatment efficiency of zero.

Listed toxic chemicals that are strong mineral acids neutralized to a pH of 6 or above are considered treated at a 100 percent efficiency.

All data available at your facility must be used to calculate waste treatment efficiency and influent toxic chemical concentration. If data are lacking, estimates must be made using best engineering judgment or other methods.

7A column e Based on Operating Data?

This column requires you to indicate "Yes" or "No" to whether the waste treatment efficiency estimate is based on actual operating data. For example, you would check "Yes" if the estimate is based on monitoring of influent and effluent wastes under typical operating conditions.

If the efficiency estimate is based on published data for similar processes or on equipment supplier's literature, or if you otherwise estimated either the influent or effluent waste comparison or the flow rate, check "No."

Section 7B On-Site Energy Recovery Processes

In Section 7B, you must indicate the on-site energy recovery methods used on the reported toxic chemical. If you do not perform on-site energy recovery for the reported toxic chemical, check the Not Applicable (NA) box at the top of Section 7B.

Example 11: Reporting On-Site Energy Recovery

One waste stream generated by your facility contains, among other chemicals, toluene and cadmium. Threshold quantities are exceeded for both of these toxic chemicals, and you would, therefore, submit two separate Form R reports. This waste stream is sent to an on-site industrial furnace which uses the heat generated in a thermal hydrocarbon cracking process at your facility. Because toluene has a significant heat value (17,440 BTU/pound) and the energy is recovered in an industrial furnace, the code "U02" would be reported in Section 7B for the Form R submitted for toluene.

However, as cadmium is a non-combustible metal and therefore does not contribute any heat value for energy recovery purposes, the combustion of cadmium in the industrial furnace is considered waste treatment, not energy recovery. You would report cadmium as entering a waste treatment step (i.e., incineration), in Section 7A, column b.

Only listed toxic chemicals that have a significant heating value and are combusted in an energy recovery unit such as an industrial furnace, kiln, or boiler, can be reported as combusted for energy recovery in this section. If a reported toxic chemical is incinerated on-site but does not contribute energy to the process (e.g., metals and chlorofluorocarbons), it must be considered waste treated on-site and reported in Section 7A. Energy recovery may take place only in one of the types of energy recovery equipment listed below.

Energy Recovery Codes

U01	Industrial Kiln
U02	Industrial Furnace
U03	Industrial Boiler
U09	Other Energy Recovery Methods

If your facility uses more than one on-site energy recovery method for the reported toxic chemical, list the methods used in descending order (greatest to least) based on the amount of the toxic chemical entering such methods.

Section 7C On-Site Recycling Processes

In Section 7C, you must report the recycling methods used on the listed toxic chemical. If you do not conduct any on-site recycling of the reported toxic chemical, check the Not Applicable (NA) box at the top of Section 7C.

In this section, use the codes below to report only the recycling methods in place at your facility that are applied to the listed toxic chemical. Do not list any off-site recycling activities (Information about off-site recycling must be reported in Part II, Section 6, "Transfers of the Toxic Chemical in Wastes to Off-Site Locations,").

On-Site Recycling Codes

R11	Solvents/Organics Recovery — Batch Still Distillation
R12	Solvents/Organics Recovery — Thin-Film Evaporation
R13	Solvents/Organics Recovery — Fractionation
R14	Solvents/Organics Recovery — Solvent Extraction
R19	Solvents/Organics Recovery — Other
R21	Metals Recovery — Electrolytic
R22	Metals Recovery — Ion Exchange
R23	Metals Recovery — Acid Leaching
R24	Metals Recovery — Reverse Osmosis
R26	Metals Recovery — Solvent Extraction
R27	Metals Recovery — High Temperature
R28	Metals Recovery — Retorting
R29	Metals Recovery — Secondary Smelting
R30	Metals Recovery — Other
R40	Acid Regeneration
R99	Other Reuse or Recovery

If your facility uses more than one on-site recycling method for a toxic chemical, enter the codes in the space provided in descending order (greatest to least) of the volume of the reported toxic chemical recovered by each process. If your facility uses more than ten separate methods for recycling the reported toxic chemical on-site, then list the ten activities that recover the greatest amount of the toxic chemical (again, in descending order).

Section 8 Source Reduction and Recycling Activities

This Section includes the new data elements mandated by section 6607 of the Pollution Prevention Act of 1990 (PPA). Section 8 is now a required section of Form R and must be completed. This is the first reporting year these data are being collected. They are included in the Form R for reports due on or before July 1, 1992, covering source reduction and recycling activities in calendar year 1991. You are not required to amend previous year's submissions to include this information.

In Section 8, you must provide information about source reduction and recycling activities related to the toxic chemical for which releases are being reported. For all appropriate questions, report only the quantity, in pounds, of the reported toxic chemical. Do not include the weight of water, soil, or other waste constituents. When reporting on a metal compound, report only the amount of the parent metal as you do when estimating release amounts. All amounts must be reported in whole numbers and up to two significant figures can be provided.

Section 8.1 through 8.9 must be completed for each toxic chemical. Section 8.10 must be completed only if a source reduction activity was newly implemented specifically (in whole or in part) for the reported toxic chemical during the reporting year. Section 8.11 allows you to indicate if you have attached additional optional information on source reduction, recycling, or pollution control activities implemented at any time at your facility.

Sections 8.1 through 8.7 require reporting of quantities for the current reporting year, the prior year, and quantities anticipated in both the first year immediately following the reporting year and the second year following the reporting year (future estimates).

Column A: 1990 (Prior Year)

Quantities for Sections 8.1 through 8.7 must be reported for the year immediately preceding the reporting year in column A. For reports due July 1, 1992, the prior year is 1990. Information available at the facility that may be used to estimate the prior year's quantities include the prior year's Form R submission, supporting documentation, and recycling, energy recovery, or treatment operating logs or invoices.

EPA believes that such data should be available, especially in those cases where the facility has filed a Form R for the reported toxic chemical in the prior year. However, for the first year of reporting these data elements, 1991, prior year quantities are required only to the extent such information is available. In the event that sufficient data are not available, enter not applicable, "NA."

Column B: 1991 (Reporting Year)

Quantities for Sections 8.1 through 8.7 must be reported for the current reporting year in column B.

Columns C and D: 1992 and 1993 (Following Year and Second Year)

Quantities for Sections 8.1 through 8.7 must be estimated for 1992 and 1993. EPA expects reasonable future quantity estimates using a logical basis. Information available at the facility to estimate quantities of the chemical expected during these years include planned source reduction activities, market projections, expected contracts, anticipated new product lines, company growth projections, and production capacity figures. Not applicable, "NA", may not be entered for these data elements. Respondents should take into account protections available for trade secrets as provided in EPCRA Section 322 (42 USC 11042).

Example 12: Reporting Future Estimates

A pharmaceutical manufacturing facility uses a listed toxic chemical in the manufacture of a prescription drug. During the reporting year (1991), the company received approval from the Food and Drug Administration to begin marketing their product as an over-the-counter drug beginning in 1992. This approval is publicly known and does not constitute confidential business information. As a result of this expanded market, the company estimates that sales and subsequent production of this drug will increase their use of the reported toxic chemical by 30 percent per year for the two years following the reporting year. The facility treats the toxic chemical on-site and the quantity treated is directly proportional to production activity. The facility thus estimates the total quantity of the reported toxic chemical treated for the following year (1992) by adding 30 percent to the amount in column B (the amount for the current reporting year). The second year (1993) figure can be calculated by adding an additional 30 percent to the amount reported in Column C (the amount for the following year (1992) projection).

Relationship to Other Laws

The reporting categories for quantities recycled, treated, used for energy recovery, and disposed apply to completing Section 8 of Form R as well as to the rest of Form R. These categories are to be used only for TRI reporting. They are not intended for use in determining, under the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations, whether a secondary material is a waste when recycled. These definitions also do not apply to the information that may be submitted in the Biennial Report required under RCRA. In addition, these definitions do not imply any future redefinition of RCRA terms and do not affect EPA's RCRA authority or authority under any other statute administered by EPA.

Differences in terminology and reporting requirements for toxic chemicals reported on Form R and for hazardous wastes regulated under RCRA occur because EPCRA and the PPA focus on specific chemicals, while the RCRA regulations and the Biennial Report focus on wastes, including mixtures. For example, a RCRA hazardous waste containing a section 313 toxic chemical is recycled to recover certain constituents of that waste, but not the toxic chemical reported under EPCRA section 313. The toxic chemical simply passes through the recycling process and remains in the residual from the recycling process. While the waste may be considered recycled under RCRA, the toxic chemical constituent would be considered to be treated for TRI purposes.

Quantities Reportable in Sections 8.1 - 8.7

8.1 Report releases pursuant to EPCRA Section 329(8) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing [on-site or off-site] into the environment (including the abandonment of barrels, containers, and other closed receptacles)." Do not include any quantity treated on-site or off-site.

8.2 - 8.3 A toxic chemical or a mixture containing a toxic chemical that is used for energy recovery on-site or is sent off-site for energy recovery, unless it is a commercially available fuel. For the purposes of reporting on Form R, reportable on-site and off-site energy recovery is the combustion of a residual material containing a TRI toxic chemical when:

(a) The combustion unit is integrated into an energy recovery system (i.e., industrial furnaces, industrial kilns, and boilers); and

(b) The toxic chemical is combustible and has a heating value high enough to sustain combustion.

8.4 - 8.5 A toxic chemical or a mixture containing a toxic chemical that is recycled on-site or is sent off-site for recycling.

8.6 - 8.7 A toxic chemical or a mixture containing a toxic chemical that is treated on-site or is sent to a POTW or other off-site location for waste treatment.

A toxic chemical or a mixture identified as a waste under RCRA must be reported in Sections 8.1 through 8.7.

Avoid Double-Counting in Sections 8.1 Through 8.8

Section 8 of Form R uses data collected to complete Part II, Sections 5 through 7. For this reason, Section 8 should be completed last.

Do not double- or multiple-count quantities in Sections 8.1 through 8.7. The quantities reported in each of those sections must be mutually exclusive. Do not multiple-count quantities entering sequential reportable activities. For example, 5,000 pounds of toxic chemical enters a treatment operation. Three thousand pounds of the toxic chemical exits the treatment operation and then enters a recycling operation. Five hundred pounds of the toxic chemical is in residues from the recycling operation which is subsequently sent off-site for disposal. These quantities would be reported as follows in Section 8:

Section 8.1:	500 pounds disposed
Section 8.4:	2,500 pounds recycled
Section 8.6:	2,000 pounds treated (5,000 that initially entered - 3,000 that subsequently entered recycling).

To report that 5,000 pounds were treated, 3,000 pounds were recycled, and that 500 pounds were sent off-site for disposal would result in over-counting the quantities of toxic chemical recycled, treated, and disposed by 3,500 pounds.

Do not include in Sections 8.1 through 8.7 any quantities of the toxic chemical released into the environment due to remedial actions; catastrophic events such as earthquakes, fires, or floods; or unanticipated one-time events not associated with the production process such as tank ruptures or reactor explosions. These quantities should be reported in Section 8.8 only. For example, 10,000 pounds of diaminoanisole sulfate is released due to a catastrophic event and is subsequently treated on-site.

The 10,000 pounds is reported in Section 8.8, but the amount subsequently treated on-site is not reported in Section 8.6.

8.8 Quantity Released to the Environment as a Result of Remedial Actions, Catastrophic Events, or One-Time Events Not Associated with Production Processes.

In Section 8.8, enter the total quantity of toxic chemical released directly into the environment or sent off-site for recycling, waste treatment, energy recovery, or disposal during the reporting year due to any of the following events:

(1) remedial actions,
(2) catastrophic events such as earthquakes, fires, or floods; or
(3) one-time events not associated with normal or routine production processes.

These quantities should not be included in Sections 8.1 through 8.7. The amount of toxic chemical released into the environment during remediation or transferred off-site is to be reported in Part II, Sections 5 and 6 as appropriate.

The purpose of this section is to separate quantities recycled, used for energy recovery, treated, or disposed that are associated with normal or routine production operations from those that are not. While all quantities released, recycled, treated, or disposed may ultimately be preventable, this section separates the quantities that are more likely to be reduced or eliminated by process-oriented source reduction activities from those releases that are largely unpredictable and are less amenable to such source reduction activities. For example, spills that occur as a routine part of production operations and could be reduced or eliminated by improved handling, loading, or unloading procedures are included in the quantities reported in Section 8.1 through 8.7 as appropriate. A total loss of containment resulting from a tank rupture caused by a tornado would be included in the quantity reported in Section 8.8.

Similarly, the amount of a toxic chemical spilled or cleaned up from normal operations during the reporting year would be included in the quantities reported in Sections 8.1 through 8.7. However, the quantity of the reported toxic chemical generated from a remedial action (e.g., RCRA corrective action) to clean up the environmental contamination resulting from past practices should be reported in Section 8.8 because they cannot currently be addressed by source reduction methods. A remedial action for purposes of Section 8.8 is a waste cleanup (including RCRA and CERCLA operations) within the facility boundary. Most remedial activities involve collecting and treating contaminated material.

Also, releases caused by catastrophic events are to be incorporated into the quantity reported in Section 8.8. Such releases may be caused by natural disasters (e.g., hurricanes and earthquakes) or by large scale accidents (e.g., fires and explosions). These amounts are not included in the quantity reported in Sections 8.1 through 8.7 because such releases are generally unanticipated and

Example 13: Quantity Released to the Environment as a Result of Remedial Actions, Catastrophic Events, or One-Time Events Not Associated with Production Processes.

A chemical manufacturer produces a toxic chemical in a reactor that operates at low pressure. The reactants and the toxic chemical product are piped in and out of the reactor at monitored and controlled temperatures. During normal operations, small amounts of fugitive emissions occur from the valves and flanges in the pipelines.

Due to a malfunction in the control panel (which is state-of-the-art and undergoes routine inspection and maintenance), the temperature and pressure in the reactor increase, the reactor ruptures, and the toxic chemical is released. Because the malfunction could not be anticipated and, therefore, could not be reasonably addressed by specific source reduction activities, the amount released is included in Section 8.8. In this case, much of the toxic chemical is released as a liquid and pools on the ground. It is estimated that 1,000 pounds of the toxic chemical pooled on the ground and was subsequently collected and sent off-site for treatment. In addition, it is estimated that another 200 pounds of the toxic chemical vaporized directly to the air from the rupture. The total amount reported in Section 8.8 is the 1,000 pounds that pooled on the ground (and subsequently sent off-site), plus the 200 pounds that vaporized into the air, a total of 1,200 pounds. The quantity sent off-site must also be reported in Section 6 (but not in Section 8.7) and the quantity that vaporized must be reported as a fugitive emission in Section 5 (but not in Section 8.1).

cannot be addressed by routine process-oriented accident prevention techniques.

By checking your documentation for calculating estimates made for Part II, Section 5, "Releases of the Toxic Chemical to the Environment," you may be able to identify release amounts from the above sources. Emergency notifications under CERCLA and EPCRA as well as accident histories required under the Clean Air Act may provide useful information. You should also check facility incident reports and maintenance records to identify one-time or catastrophic events.

Note that while the information reported in Section 8.8 represents only remedial, catastrophic, or one-time events not associated with production processes, Section 5 of Form R (releases to the environment) and Section 6 (off-site transfers), must include all releases and transfers as appropriate, regardless of whether they arise from catastrophic, remedial, or routine process operations.

8.9 Production Ratio or Activity Index

For Section 8.9, you must provide a ratio of reporting year production to prior year production, or provide an "activity index" based on a variable other than production that is the primary influence on the quantity of the reported toxic chemical recycled, used for energy recovery, treated, or disposed. The ratio or index must be reported to the nearest tenths or hundredths place (e.g., one or two digits to the right of the decimal point). If the manufacture or use of the reported toxic chemical began during the current reporting year, enter not applicable, "NA," as the production ratio or activity index.

It is important to realize that if your facility reports more than one reported toxic chemical, the production ratio or activity index may vary for different chemicals. For facilities that manufacture reported toxic chemicals, the quantities of the toxic chemical(s) produced in the current and prior years provide a good basis for the ratio because that is the primary business activity associated with the reported toxic chemical(s). In most cases, the production ratio or activity index must be based on some variable of production or activity rather than on toxic chemical or material usage. Indices based on toxic chemical or material usage may reflect the effect of source reduction activities rather than changes in business activity. Toxic chemical or material usage is therefore not a basis to be used for the production ratio or activity index where the toxic chemical is "otherwise-used" (i.e., non-incorporative activities such as extraction solvents, metal degreasers, etc.).

Example 14: Determining a Production Ratio

Your facility's only use of toluene is as a paint carrier for a painting operation. You painted 12,000 refrigerators in the current reporting year and 10,000 refrigerators during the preceding year. The production ratio for toluene in this case is 1.2 (12,000/10,000) because the number of refrigerators produced is the primary factor determining the quantity of toluene to be reported in Sections 8.1 through 8.7.

A facility manufactures inorganic pigments, including titanium dioxide. Hydrochloric acid is produced as a waste byproduct during the production process. An appropriate production ratio for hydrochloric acid is the annual titanium dioxide production, not the amount of byproduct generated. If the facility produced 20,000 pounds of titanium dioxide during the reporting year and 26,000 pounds in the preceding year, the production ratio would be 0.77 (20,000/26,000).

While several methods are available to the facility for determining this data element, the production ratio or activity index must be based on the variable that most directly affects the quantities of the toxic chemical recycled, used for energy recovery, treated, or disposed. Examples of methods available include:

(1) Amount of toxic chemical manufactured in 1991 divided by the amount of toxic chemical manufactured in 1990; or

(2) Amount of product produced in 1991 divided by the amount of product produced in 1990.

Example 15: Determining an Activity Index

Your facility manufactures organic dyes in a batch process. Different colors of dyes are manufactured, and between color changes, all equipment must be thoroughly cleaned with solvent containing glycol ethers to reduce color carryover. During the preceding year, the facility produced 2,000 pounds of yellow dye in January, 9,000 pounds of green dye for February through September, 2,000 pounds of red dye in November, and another 2,000 pounds of yellow dye in December. This adds up to a total of 15,000 pounds and four color changeovers. During the reporting year, the facility produced 10,000 pounds of green dye during the first half of the year and 10,000 pounds of red dye in the second half. If your facility uses glycol ethers in this cleaning process only, an activity index of 0.5 (based on two color changeovers for the reporting year divided by four changeovers for the preceding year) is more appropriate than a production ratio of 1.33 (based on 20,000 pounds of dye produced in the current year divided by 15,000 pounds in the preceding year). In this case, an activity index, rather than a production ratio, better reflects the factors that influence the amount of solvent recycled, used for energy recovery, treated, or disposed.

A facility that manufactures thermoplastic composite parts for aircraft uses acetone as a wipe solvent to clean molds. The solvent is stored in 55-gallon drums and is transferred to 1-gallon dispensers. The molds are cleaned on an as-needed basis that is not necessarily a function of the parts production rate. Operators cleaned 5,200 molds during the reporting year, but only cleaned 2,000 molds in the previous year. An activity index of 2.6 (5,200/2,000) represents the activities involving acetone usage in the facility. If the molds were cleaned after 1,000 parts were manufactured, a production ratio would equal the activity index and either could be used as the basis for the index.

A facility manufactures surgical instruments and cleans the metal parts with 1,1,1-trichloroethane in a vapor degreaser. The degreasing unit is operated in a batch mode and the metal parts are cleaned according to an irregular schedule. The activity index can be based upon the total time the metal parts are in the degreasing operation. If the degreasing unit operated 3,900 hours during the reporting year and 3,000 hours the prior year, the activity index is 1.3 (3,900/3,000).

A pharmaceutical plant uses hydrochloric acid to regenerate deionization units that supply deionized water to several operations in the facility. During the reporting year, the facility noted that the units were recharged once per week. Records for the prior year indicate that the units were recharged four times per week. Provided that the reduction in recharges per week is not part of a planned source reduction program, an index of 0.25 (1/4) represents the activities that were the primary influence on the amount of hydrochloric acid recycled, used for energy recovery, treated, or disposed.

Example 16: "NA" is Entered as the Production Ratio or Activity Index

Your facility began production of a microwidget during this reporting year. Perchloroethylene is used as a cleaning solvent for this operation and this is the only use of the toxic chemical in your facility. You would enter not applicable, "NA," in Section 8.9 because you have no basis of comparison in the prior year for the purposes of developing the activity index.

Example 17: Determining the Production Ratio Based on a Weighted Average

At many facilities, a reported toxic chemical is used in more than one production process. In these cases, a production ratio or activity index can be estimated by weighting the production ratio for each process based on the respective contribution of each process to the quantity of the reported toxic chemical recycled, used for energy recovery, treated, or disposed.

Your facility paints bicycles with paint containing toluene. Sixteen thousand bicycles were produced in the reporting year and 14,500 were produced in the prior year. There were no significant design modifications that changed the total surface area to be painted for each bike. The bicycle production ratio is 1.1 (16,000/14,5000). You estimate 12,500 pounds of toluene treated, recycled, used for energy recovery, or disposed as a result of bicycle production. Your facility also uses toluene as a solvent in a glue that is used to make components and add-on equipment for the bicycles. Thirteen thousand components were manufactured in the reporting year as compared to 15,000 during the prior year. The production ratio for the components using toluene is 0.87 (13,000/15,000). You estimate 1,000 pounds of toluene treated, recycled, used for energy recovery, or disposed as a result of components production. A production ratio can be calculated by weighting each of the production ratios based on the relative contribution each has to the quantities of toluene treated, recycled, used for energy recovery, or disposed during the reporting year (13,500 pounds). The production ratio is calculated as follows:

$$\text{Production ratio} = (12{,}500/13{,}500 \times 1.1) + (1{,}000/13{,}500 \times 0.87) = 1.08$$

8.10 Did Your Facility Engage in any Source Reduction Activities for this Chemical during the Reporting Year?

If your facility engaged in any source reduction activity for the reported toxic chemical during the reporting year, report the activity that was implemented and the method used to identify the opportunity for the activity implemented. If your facility did not engage in any source reduction activity for the reported toxic chemical, enter not applicable, "NA," in Section 8.10.1 and answer Section 8.11.

Source reduction means any practice which:

- Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and
- Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.

The term source reduction does not include any practice which alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service.

Source reduction activities do not include recycling, treating, using for energy recovery, or disposing of a toxic chemical. Report in this section only the source reduction activities implemented to reduce or eliminate the quantities reported in Sections 8.1 through 8.7 — the focus of the section is only those activities that are applied to reduce routine or reasonably anticipated releases and quantities of the reported toxic chemical recycled, treated, used for energy recovery, or disposed. Do not report in this section any activities taken to reduce or eliminate the quantities reported in Section 8.8.

Example 18: Source Reduction

A facility assembles and paints furniture. Both the glue used to assemble the furniture and the paints contain listed toxic chemicals. By examining the gluing process, the facility discovered that a new drum of glue is opened at the beginning of each shift, whether the old drum is empty or not. By adding a mechanism that prevents the drum from being changed before it is empty, the need for disposal of the glue is eliminated at the source. As a result, this activity is considered source reduction. The painting process at this facility generates a solvent waste which is collected and recovered. The recovered solvent is used to clean the painting equipment. The recycling activity does not reduce the amount of toxic chemical recycled, and therefore is not considered a source reduction activity.

Source Reduction Activities

You must enter in the first column of Section 8.10, "Source Reduction Activities," the appropriate code(s) indicating the type of actions taken to reduce the amount of the reported toxic chemical released (as reported in Section 8.1), used for energy recovery (as reported in Section 8.2), recycled (as reported in Section 8.4-8.5), or treated (as reported in Section 8.6-8.7). The list of codes below includes many, but not all, of the codes provided in the RCRA biennial report. Remember that source reduction activities include only those actions or techniques that reduce or eliminate the amounts of the toxic chemical reported in Section 8.1 through 8.7. Actions taken to recycle, treat, or dispose of the toxic chemical are not considered source reduction activities.

Source Reduction Activity Codes:

Good Operating Practices

W13 Improved maintenance scheduling, recordkeeping, or procedures
W14 Changed production schedule to minimize equipment and feedstock changeovers
W19 Other changes in operating practices

Inventory Control

W21 Instituted procedures to ensure that materials do not stay in inventory beyond shelf-life
W22 Began to test outdated material — continue to use if still effective
W23 Eliminated shelf-life requirements for stable materials
W24 Instituted better labelling procedures
W25 Instituted clearinghouse to exchange materials that would otherwise be discarded
W29 Other changes in inventory control

Spill and Leak Prevention

W31 Improved storage or stacking procedures
W32 Improved procedures for loading, unloading, and transfer operations
W33 Installed overflow alarms or automatic shut-off valves
W35 Installed vapor recovery systems
W36 Implemented inspection or monitoring program of potential spill or leak sources
W39 Other spill and leak prevention

Raw Material Modifications

W41 Increased purity of raw materials
W42 Substituted raw materials
W49 Other raw material modifications

Process Modifications

W51 Instituted recirculation within a process
W52 Modified equipment, layout, or piping
W53 Use of a different process catalyst
W54 Instituted better controls on operating bulk containers to minimize discarding of empty containers
W55 Changed from small volume containers to bulk containers to minimize discarding of empty containers
W58 Other process modifications

Cleaning and Degreasing

W59 Modified stripping/cleaning equipment
W60 Changed to mechanical stripping/cleaning devices (from solvents or other materials)
W61 Changed to aqueous cleaners (from solvents or other materials)

W63 Modified containment procedures for cleaning units
W64 Improved draining procedures
W65 Redesigned parts racks to reduce dragout
W66 Modified or installed rinse systems
W67 Improved rinse equipment design
W68 Improved rinse equipment operation
W71 Other cleaning and degreasing modifications

Surface Preparation and Finishing

W72 Modified spray systems or equipment
W73 Substituted coating materials used
W74 Improved application techniques
W75 Changed from spray to other system
W78 Other surface preparation and finishing modifications

Product Modifications

W81 Changed product specifications
W82 Modified design or composition of product
W83 Modified packaging
W89 Other product modifications

In columns a through c of Section 8.10, the "Methods to Identify Activity", you must enter one or more of the following code(s) that correspond to those internal and external method(s) or information sources you used to identify the possibility for a source reduction activity implementation at your facility. If more than three methods were used to identify the source reduction activity, enter only the three codes that contributed most to the decision to implement the activity.

Methods to Identify Activity

T01 Internal pollution prevention opportunity audit(s)
T02 External pollution prevention opportunity audit(s)
T03 Materials balance audits
T04 Participative team management
T05 Employee recommendation (independent of a formal company program)
T06 Employee recommendation (under a formal company program)
T07 State government technical assistance program
T08 Federal government technical assistance program
T09 Trade association/industry technical assistance program
T10 Vendor assistance
T11 Other

8.11 Is Additional Information on Source Reduction, Recycling, or Pollution Control Activities Included with this Report?

Check "Yes" for this data element if you have attached to this report any additional optional information on source reduction, recycling, or pollution control activities you have implemented in the reporting year or in prior years for the reported toxic chemical. If you are not including additional information, check "No."

If you submit additional optional information, try to limit this information to one page that summarizes the source reduction, recycling, or pollution control activities. If there is a contact person at the facility, other than the technical or public contact provided in Part I, Section 4, the summary page should include that person's name and telephone number for individuals who wish to obtain further information about those activities. Also submit a copy of this additional information to the appropriate state agency as part of the Form R submittal to that agency.

TABLE II. SECTION 313 TOXIC CHEMICAL LIST FOR REPORTING YEAR 1991 (including Toxic Chemical Categories)

Specific toxic chemicals with CAS Number are listed in alphabetical order on this page. A list of the same chemicals in CAS Number order begins at the end of the alphabetical list of toxic chemicals. Covered toxic chemical categories follow.

Certain toxic chemicals listed in Table II have parenthetic "qualifiers." These qualifiers indicate that these toxic chemicals are subject to the section 313 reporting requirements if manufactured, processed, or otherwise used in a specific form. The following chemicals are reportable only if they are manufactured, processed, or otherwise used in the specific form(s) listed below:

Chemical	CAS Number	Qualifier
Aluminum (fume or dust)	7429-90-5	Only if it is in a fume or dust form.
Aluminum oxide (fibrous forms)	1344-28-1	Only if it is a fibrous form.
Ammonium nitrate (solution)	6484-52-2	Only if it is in a solution.
Ammonium sulfate (solution)	7783-20-2	Only if it is in a solution.
Asbestos (friable)	1332-21-4	Only if it is a friable form.
Isopropyl alcohol (manufacturing - strong acid process, no supplier notification)	67-63-0	Only if it is being manufactured by the strong acid process.
Phosphorus (yellow or white)	7723-14-0	Only if it is a yellow or white form.
Saccharin (manufacturing, no supplier notification).	81-07-2	Only if it is being manufactured.
Vanadium (fume or dust)	7440-62-2	Only if it is in a fume or dust form.
Zinc (fume or dust)	7440-66-6	Only if it is in a fume or dust form.

[Note: Chemicals may be added to or deleted from the list. The Emergency Planning and Community Right-to-Know Information Hotline, (800) 535-0202 or (703) 920-9877, will provide up-to-date information on the status of these changes. See Section B.4.b of the instructions for more information on the de minimis values listed below.]

*C.I. means "Color Index"

a. Alphabetical Chemical List

CAS Number	Toxic Chemical Name	De Minimis Concentration
75-07-0	Acetaldehyde	0.1
60-35-5	Acetamide	0.1
67-64-1	Acetone	1.0
75-05-8	Acetonitrile	1.0
53-96-3	2-Acetylaminofluorene	0.1
107-02-8	Acrolein	1.0
79-06-1	Acrylamide	0.1
79-10-7	Acrylic acid	1.0
107-13-1	Acrylonitrile	0.1
309-00-2	Aldrin {1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-(1.alpha., 4.alpha.,4a.beta.,5.alpha., 8.alpha.,8a.beta.)-}	1.0
107-18-6	Allyl alcohol	1.0
107-05-1	Allyl chloride	1.0
7429-90-5	Aluminum (fume or dust)	1.0
1344-28-1	Aluminum oxide (fibrous forms)	0.1
117-79-3	2-Aminoanthraquinone	0.1
60-09-3	4-Aminoazobenzene	0.1
92-67-1	4-Aminobiphenyl	0.1
82-28-0	1-Amino-2-methylanthraquinone	0.1
7664-41-7	Ammonia	1.0
6484-52-2	Ammonium nitrate (solution)	1.0
7783-20-2	Ammonium sulfate (solution)	1.0
62-53-3	Aniline	1.0
90-04-0	o-Anisidine	0.1
104-94-9	p-Anisidine	1.0
134-29-2	o-Anisidine hydrochloride	0.1
120-12-7	Anthracene	1.0
7440-36-0	Antimony	1.0
7440-38-2	Arsenic	0.1
1332-21-4	Asbestos (friable)	0.1
7440-39-3	Barium	1.0
98-87-3	Benzal chloride	1.0
55-21-0	Benzamide	1.0
71-43-2	Benzene	0.1
92-87-5	Benzidine	0.1
98-07-7	Benzoic trichloride {Benzotrichloride}	0.1
98-88-4	Benzoyl chloride	1.0
94-36-0	Benzoyl peroxide	1.0
100-44-7	Benzyl chloride	1.0
7440-41-7	Beryllium	0.1
92-52-4	Biphenyl	1.0
111-44-4	Bis(2-chloroethyl) ether	1.0
542-88-1	Bis(chloromethyl) ether	
0.1108-60-1	Bis(2-chloro-1-methylethyl) ether	1.0
103-23-1	Bis(2-ethylhexyl) adipate	1.0
353-59-3	Bromochlorodifluoromethane {Halon 1211}	1.0
75-25-2	Bromoform {Tribromomethane}	1.0
74-83-9	Bromomethane {Methyl bromide}	1.0
75-63-8	Bromotrifluoromethane {Halon 1301}	1.0
106-99-0	1,3-Butadiene	0.1
141-32-2	Butyl acrylate	1.0
71-36-3	n-Butyl alcohol	1.0
78-92-2	sec-Butyl alcohol	1.0
75-65-0	tert-Butyl alcohol	1.0
85-68-7	Butyl benzyl phthalate	1.0
106-88-7	1,2-Butylene oxide	1.0
123-72-8	Butyraldehyde	1.0
4680-78-8	C.I. Acid Green 3*	1.0
569-64-2	C.I. Basic Green 4*	1.0
989-38-8	C.I. Basic Red 1*	0.1
1937-37-7	C.I. Direct Black 38*	0.1
2602-46-2	C.I. Direct Blue 6*	0.1
16071-86-6	C.I. Direct Brown 95*	0.1
2832-40-8	C.I. Disperse Yellow 3*	1.0
3761-53-3	C.I. Food Red 5*	0.1
81-88-9	C.I. Food Red 15*	0.1
3118-97-6	C.I. Solvent Orange 7*	1.0
97-56-3	C.I. Solvent Yellow 3*	0.1
842-07-9	C.I. Solvent Yellow 14*	0.1
492-80-8	C.I. Solvent Yellow 34* {Aurimine}	0.1
128-66-5	C.I. Vat Yellow 4*	1.0
7440-43-9	Cadmium	0.1
156-62-7	Calcium cyanamide	1.0
133-06-2	Captan {1H-Isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-}	1.0
63-25-2	Carbaryl {1-Naphthalenol, methylcarbamate}	1.0
75-15-0	Carbon disulfide	1.0
56-23-5	Carbon tetrachloride	0.1
463-58-1	Carbonyl sulfide	1.0

*C.I. means "Color Index"

CAS Number	Toxic Chemical Name	De Minimis Concentration
120-80-9	Catechol	1.0
133-90-4	Chloramben (Benzoic acid, 3-amino-2,5-dichloro-)	1.0
57-74-9	Chlordane (4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-)	1.0
7782-50-5	Chlorine	1.0
10049-04-4	Chlorine dioxide	1.0
79-11-8	Chloroacetic acid	1.0
532-27-4	2-Chloroacetophenone	1.0
108-90-7	Chlorobenzene	1.0
510-15-6	Chlorobenzilate (Benzeneacetic acid,4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-,ethyl ester)	1.0
75-00-3	Chloroethane (Ethyl chloride)	1.0
67-66-3	Chloroform	0.1
74-87-3	Chloromethane (Methyl chloride)	1.0
107-30-2	Chloromethyl methyl ether	0.1
126-99-8	Chloroprene	1.0
1897-45-6	Chlorothalonil (1,3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-)	1.0
7440-47-3	Chromium	0.1
7440-48-4	Cobalt	1.0
7440-50-8	Copper	1.0
8001-58-9	Creosote	0.1
120-71-8	p-Cresidine	0.1
1319-77-3	Cresol (mixed isomers)	1.0
108-39-4	m-Cresol	1.0
95-48-7	o-Cresol	1.0
106-44-5	p-Cresol	1.0
98-82-8	Cumene	1.0
80-15-9	Cumene hydroperoxide	1.0
135-20-6	Cupferron (Benzeneamine, N-hydroxy-N-nitroso, ammonium salt)	0.1
110-82-7	Cyclohexane	1.0
94-75-7	2,4-D (Acetic acid, (2,4-dichlorophenoxy)-)	1.0
1163-19-5	Decabromodiphenyl oxide	1.0
2303-16-4	Diallate (Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester)	1.0
615-05-4	2,4-Diaminoanisole	0.1
39156-41-7	2,4-Diaminoanisole sulfate	0.1
101-80-4	4,4'-Diaminodiphenyl ether	0.1
25376-45-8	Diaminotoluene (mixed isomers)	0.1
95-80-7	2,4-Diaminotoluene	0.1
334-88-3	Diazomethane	1.0
132-64-9	Dibenzofuran	1.0
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	0.1
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.1
124-73-2	Dibromotetrafluoroethane (Halon 2402)	1.0
84-74-2	Dibutyl phthalate	1.0
25321-22-6	Dichlorobenzene (mixed isomers)	0.1
95-50-1	1,2-Dichlorobenzene	1.0
541-73-1	1,3-Dichlorobenzene	1.0
106-46-7	1,4-Dichlorobenzene	0.1
91-94-1	3,3'-Dichlorobenzidine	0.1
75-27-4	Dichlorobromomethane	1.0
75-71-8	Dichlorodifluoromethane (CFC-12)	1.0
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	0.1
540-59-0	1,2-Dichloroethylene	1.0
75-09-2	Dichloromethane (Methylene chloride)	0.1
120-83-2	2,4-Dichlorophenol	1.0
78-87-5	1,2-Dichloropropane	1.0
78-88-6	2,3-Dichloropropene	1.0
542-75-6	1,3-Dichloropropylene	0.1
76-14-2	Dichlorotetrafluoroethane (CFC-114)	1.0
62-73-7	Dichlorvos (Phosphoric acid, 2,2-dichloroethenyl dimethyl ester)	1.0
115-32-2	Dicofol (Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.- (trichloromethyl)-)	1.0
1464-53-5	Diepoxybutane	0.1
111-42-2	Diethanolamine	1.0
177-81-7	Di-(2-ethylhexyl) phthalate (DEHP)	0.1
84-66-2	Diethyl phthalate	1.0
64-67-5	Diethyl sulfate	0.1
119-90-4	3,3'-Dimethoxybenzidine	0.1
60-11-7	4-Dimethylaminoazobenzene	0.1

*C.I. means "Color Index"

CAS Number	Toxic Chemical Name	De Minimis Concentration
119-93-7	3,3'-Dimethylbenzidine (o-Tolidine)	0.1
79-44-7	Dimethylcarbamyl chloride	0.1
57-14-7	1,1-Dimethyl hydrazine	0.1
105-67-9	2,4-Dimethylphenol	1.0
131-11-3	Dimethyl phthalate	1.0
77-78-1	Dimethyl sulfate	0.1
99-65-0	m-Dinitrobenzene	1.0
528-29-0	o-Dinitrobenzene	1.0
100-25-4	p-Dinitrobenzene	1.0
534-52-1	4,6-Dinitro-o-cresol	1.0
51-28-5	2,4-Dinitrophenol	1.0
121-14-2	2,4-Dinitrotoluene	1.0
606-20-2	2,6-Dinitrotoluene	1.0
25321-14-6	Dinitrotoluene (mixed isomers)	1.0
117-84-0	n-Dioctyl phthalate	1.0
123-91-1	1,4-Dioxane	0.1
122-66-7	1,2-Diphenylhydrazine (Hydrazobenzene)	0.1
106-89-8	Epichlorohydrin	0.1
110-80-5	2-Ethoxyethanol	1.0
140-88-5	Ethyl acrylate	0.1
100-41-4	Ethylbenzene	1.0
541-41-3	Ethyl chloroformate	1.0
74-85-1	Ethylene	1.0
107-21-1	Ethylene glycol	1.0
151-56-4	Ethyleneimine (Aziridine)	0.1
75-21-8	Ethylene oxide	0.1
96-45-7	Ethylene thiourea	0.1
2164-17-2	Fluometuron (Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-)	1.0
50-00-0	Formaldehyde	0.1
76-13-1	Freon 113 (Ethane, 1,1,2-trichloro-1,2,2-trifluoro-)	1.0
76-44-8	Heptachlor (1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene)	1.0
118-74-1	Hexachlorobenzene	0.1
87-68-3	Hexachloro-1,3-butadiene	1.0
77-47-4	Hexachlorocyclopentadiene	1.0
67-72-1	Hexachloroethane	1.0
1335-87-1	Hexachloronaphthalene	1.0
680-31-9	Hexamethylphosphoramide	0.1
302-01-2	Hydrazine	0.1
10034-93-2	Hydrazine sulfate	0.1
7647-01-0	Hydrochloric acid	1.0
74-90-8	Hydrogen cyanide	1.0
7664-39-3	Hydrogen fluoride	1.0
123-31-9	Hydroquinone	1.0
78-84-2	Isobutyraldehyde	1.0
67-63-0	Isopropyl alcohol (manufacturing-strong acid process, no supplier notification)	0.1
80-05-7	4,4'-Isopropylidenediphenol	1.0
120-58-1	Isosafrole	1.0
7439-92-1	Lead	0.1
58-89-9	Lindane (Cyclohexane,1,2,3,4,5,6-hexachloro-,(1.alpha.,2.alpha., 3.beta.,4.alpha.,5.alpha.,6.beta.)-)	0.1
108-31-6	Maleic anhydride	1.0
12427-38-2	Maneb (Carbamodithioic acid, 1,2-ethanediylbis-,manganese complex)	1.0
7439-96-5	Manganese	1.0
7439-97-6	Mercury	1.0
67-56-1	Methanol	1.0
72-43-5	Methoxychlor (Benzene, 1,1'-(2,2,2-trichloroethylidene)bis [4-methoxy-])	1.0
109-86-4	2-Methoxyethanol	1.0
96-33-3	Methyl acrylate	1.0
1634-04-4	Methyl tert-butyl ether	1.0
101-14-4	4,4'-Methylenebis (2-chloroaniline) (MBOCA)	0.1
101-61-1	4,4'-Methylenebis (N,N-dimethyl) benzenamine	0.1
101-68-8	Methylenebis (phenylisocyanate) (MBI)	1.0
74-95-3	Methylene bromide	1.0
101-77-9	4,4'-Methylenedianiline	0.1
78-93-3	Methyl ethyl ketone	1.0
60-34-4	Methyl hydrazine	1.0
74-88-4	Methyl iodide	0.1
108-10-1	Methyl isobutyl ketone	1.0
624-83-9	Methyl isocyanate	1.0
80-62-6	Methyl methacrylate	1.0
90-94-8	Michler's ketone	0.1
1313-27-5	Molybdenum trioxide	1.0
76-15-3	(Mono)chloropentafluoroethane (CFC-115)	1.0

*C.I. means "Color Index"

CAS Number	Toxic Chemical Name	De Minimis Concentration
505-60-2	Mustard gas {Ethane, 1,1'-thiobis[2-chloro-]}	0.1
91-20-3	Naphthalene	1.0
134-32-7	alpha-Naphthylamine	0.1
91-59-8	beta-Naphthylamine	0.1
7440-02-0	Nickel	0.1
7697-37-2	Nitric acid	1.0
139-13-9	Nitrilotriacetic acid	0.1
99-59-2	5-Nitro-o-anisidine	0.1
98-95-3	Nitrobenzene	1.0
92-93-3	4-Nitrobiphenyl	0.1
1836-75-5	Nitrofen {Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-}	0.1
51-75-2	Nitrogen mustard {2-Chloro-N-(2-chloroethyl)-N-methylethanamine}	0.1
55-63-0	Nitroglycerin	1.0
88-75-5	2-Nitrophenol	1.0
100-02-7	4-Nitrophenol	1.0
79-46-9	2-Nitropropane	0.1
156-10-5	p-Nitrosodiphenylamine	0.1
121-69-7	N,N-Dimethylaniline	1.0
924-16-3	N-Nitrosodi-n-butylamine	0.1
55-18-5	N-Nitrosodiethylamine	0.1
62-75-9	N-Nitrosodimethylamine	0.1
86-30-6	N-Nitrosodiphenylamine	1.0
621-64-7	N-Nitrosodi-n-propylamine	0.1
4549-40-0	N-Nitrosomethylvinylamine	0.1
59-89-2	N-Nitrosomorpholine	0.1
759-73-9	N-Nitroso-N-ethylurea	0.1
684-93-5	N-Nitroso-N-methylurea	0.1
16543-55-8	N-Nitrosonornicotine	0.1
100-75-4	N-Nitrosopiperidine	0.1
2234-13-1	Octachloronaphthalene	1.0
20816-12-0	Osmium tetroxide	1.0
56-38-2	Parathion {Phosphorothioic acid, O, O-diethyl-O-(4-nitrophenyl) ester}	1.0
87-86-5	Pentachlorophenol {PCP}	1.0
79-21-0	Peracetic acid	1.0
108-95-2	Phenol	1.0
106-50-3	p-Phenylenediamine	1.0
90-43-7	2-Phenylphenol	1.0
75-44-5	Phosgene	1.0
7664-38-2	Phosphoric acid	1.0
7723-14-0	Phosphorus (yellow or white)	1.0
85-44-9	Phthalic anhydride	1.0
88-89-1	Picric acid	1.0
1336-36-3	Polychlorinated biphenyls {PCBs}	0.1
1120-71-4	Propane sultone	0.1
57-57-8	beta-Propiolactone	0.1
123-38-6	Propionaldehyde	1.0
114-26-1	Propoxur {Phenol, 2-(1-methylethoxy)-, methylcarbamate}	1.0
115-07-1	Propylene {Propene}	1.0
75-55-8	Propyleneimine	0.1
75-56-9	Propylene oxide	0.1
110-86-1	Pyridine	1.0
91-22-5	Quinoline	1.0
106-51-4	Quinone	1.0
82-68-8	Quintozene {Pentachloronitrobenzene}	1.0
81-07-2	Saccharin (manufacturing, no supplier notification) {1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide}	0.1
94-59-7	Safrole	0.1
7782-49-2	Selenium	1.0
7440-22-4	Silver	1.0
100-42-5	Styrene	0.1
96-09-3	Styrene oxide	0.1
7664-93-9	Sulfuric acid	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.1
127-18-4	Tetrachloroethylene {Perchloroethylene}	0.1
961-11-5	Tetrachlorvinphos {Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl) ethenyl dimethyl ester}	1.0
7440-28-0	Thallium	1.0
62-55-5	Thioacetamide	0.1
139-65-1	4,4'-Thiodianiline	0.1
62-56-6	Thiourea	0.1
1314-20-1	Thorium dioxide	1.0
7550-45-0	Titanium tetrachloride	1.0
108-88-3	Toluene	1.0
584-84-9	Toluene-2,4-diisocyanate	0.1
91-08-7	Toluene-2,6-diisocyanate	0.1
26471-62-5	Toluenediisocyanate (mixed isomers)	0.1
95-53-4	o-Toluidine	0.1
636-21-5	o-Toluidine hydrochloride	0.1
8001-35-2	Toxaphene	0.1

*C.I. means "Color Index"

CAS Number	Toxic Chemical Name	De Minimis Concentration
68-76-8	Triaziquone {2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-}	0.1
52-68-6	Trichlorfon {Phosphonic acid,(2,2,2-trichloro-1-hydroxyethyl)-,dimethyl ester}	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0
71-55-6	1,1,1-Trichloroethane {Methyl chloroform}	1.0
79-00-5	1,1,2-Trichloroethane	1.0
79-01-6	Trichloroethylene	1.0
75-69-4	Trichlorofluoromethane {CFC-11}	1.0
95-95-4	2,4,5-Trichlorophenol	1.0
88-06-2	2,4,6-Trichlorophenol	0.1
1582-09-8	Trifluralin {Benzenamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-1}	1.0
95-63-6	1,2,4-Trimethylbenzene	1.0
126-72-7	Tris (2,3-dibromopropyl) phosphate	0.1
51-79-6	Urethane {Ethyl carbamate}	0.1
7440-62-2	Vanadium (fume or dust)	1.0
108-05-4	Vinyl acetate	1.0
593-60-2	Vinyl bromide	0.1
75-01-4	Vinyl chloride	0.1
75-35-4	Vinylidene chloride	1.0
1330-20-7	Xylene (mixed isomers)	1.0
108-38-3	m-Xylene	1.0
95-47-6	o-Xylene	1.0
106-42-3	p-Xylene	1.0
87-62-7	2,6-Xylidine	1.0
7440-66-6	Zinc (fume or dust)	1.0
12122-67-7	Zineb {Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex}	1.0

*C.I. means "Color Index"

b. List By CAS Number

CAS Number	Toxic Chemical Name	De Minimis Concentration
50-00-0	Formaldehyde	0.1
51-28-5	2,4-Dinitrophenol	1.0
51-75-2	Nitrogen mustard {2-Chloro-N-(2-chloroethyl)-N-methylethanamine}	0.1
51-79-6	Urethane {Ethyl carbamate}	0.1
52-68-6	Trichlorfon {Phosphonic acid,(2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester}	1.0
53-96-3	2-Acetylaminofluorene	0.1
55-18-5	N-Nitrosodiethylamine	0.1
55-21-0	Benzamide	1.0
55-63-0	Nitroglycerin	1.0
56-23-5	Carbon tetrachloride	0.1
56-38-2	Parathion {Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl)ester}	1.0
57-14-7	1,1-Dimethyl hydrazine	0.1
57-57-8	beta-Propiolactone	0.1
57-74-9	Chlordane {4,7-Methanoindan,1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-}	1.0
58-89-9	Lindane {Cyclohexane,1,2,3,4,5,6-hexachloro-,(1.alpha.,2.alpha.,3.beta., 4.alpha.,5.alpha.,6.beta.)-}	0.1
59-89-2	N-Nitrosomorpholine	0.1
60-09-3	4-Aminoazobenzene	0.1
60-11-7	4-Dimethylaminoazobenzene	0.1
60-34-4	Methyl hydrazine	1.0
60-35-5	Acetamide	0.1
62-53-3	Aniline	1.0
62-55-5	Thioacetamide	0.1
62-56-6	Thiourea	0.1
62-73-7	Dichlorvos {Phosphoric acid, 2,2-dichloroethenyl dimethyl ester}	1.0
62-75-9	N-Nitrosodimethylamine	0.1
63-25-2	Carbaryl {1-Naphthalenol, methylcarbamate}	1.0
64-67-5	Diethyl sulfate	0.1
67-56-1	Methanol	1.0
67-63-0	Isopropyl alcohol (manufacturing-strong acid process, no supplier notification)	0.1
67-64-1	Acetone	1.0
67-66-3	Chloroform	0.1
67-72-1	Hexachloroethane	1.0
68-76-8	Triaziquone {2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-}	0.1
71-36-3	n-Butyl alcohol	1.0
71-43-2	Benzene	0.1
71-55-6	1,1,1-Trichloroethane {Methyl chloroform}	1.0
72-43-5	Methoxychlor {Benzene, 1,1'-(2,2,2-trichloroethylidene)bis [4-methoxy-]}	1.0
74-83-9	Bromomethane {Methyl bromide}	1.0
74-85-1	Ethylene	1.0
74-87-3	Chloromethane {Methyl chloride}	1.0
74-88-4	Methyl iodide	0.1
74-90-8	Hydrogen cyanide	1.0
74-95-3	Methylene bromide	1.0
75-00-3	Chloroethane {Ethyl chloride}	1.0
75-01-4	Vinyl chloride	0.1
75-05-8	Acetonitrile	1.0
75-07-0	Acetaldehyde	0.1
75-09-2	Dichloromethane {Methylene chloride}	0.1
75-15-0	Carbon disulfide	1.0
75-21-8	Ethylene oxide	0.1
75-25-2	Bromoform {Tribromomethane}	1.0
75-27-4	Dichlorobromomethane	1.0
75-35-4	Vinylidene chloride	1.0
75-44-5	Phosgene	1.0
75-55-8	Propyleneimine	0.1
75-56-9	Propylene oxide	0.1
75-63-8	Bromotrifluoromethane {Halon 1301}	1.0
75-65-0	tert-Butyl alcohol	1.0
75-69-4	Trichlorofluoromethane {CFC-11}	1.0
75-71-8	Dichlorodifluoromethane {CFC-12}	1.0
76-14-2	Dichlorotetrafluoroethane {CFC-114}	1.0
76-15-3	Monochloropentafluoroethane {CFC-115}	1.0

*C.I. means "Color Index"

CAS Number	Toxic Chemical Name	De Minimis Concentration
76-44-8	Heptachlor {1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene}	1.0
77-13-1	Freon 113 {Ethane, 1,1,2-trichloro-1,2,2-trifluoro-}	1.0
77-47-4	Hexachlorocyclopentadiene	1.0
77-78-1	Dimethyl sulfate	0.1
78-84-2	Isobutyraldehyde	1.0
78-87-5	1,2-Dichloropropane	1.0
78-88-6	2,3-Dichloropropene	1.0
78-92-2	sec-Butyl alcohol	1.0
78-93-3	Methyl ethyl ketone	1.0
79-00-5	1,1,2-Trichloroethane	1.0
79-01-6	Trichloroethylene	1.0
79-06-1	Acrylamide	0.1
79-10-7	Acrylic acid	1.0
79-11-8	Chloroacetic acid	1.0
79-21-0	Peracetic acid	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.1
79-44-7	Dimethylcarbamyl chloride	0.1
79-46-9	2-Nitropropane	0.1
80-05-7	4,4'-Isopropylidenediphenol	1.0
80-15-9	Cumene hydroperoxide	1.0
80-62-6	Methyl methacrylate	1.0
81-07-2	Saccharin (manufacturing, no supplier notification) {1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide}	0.1
81-88-9	C.I. Food Red 15*	0.1
82-28-0	1-Amino-2-methyl-anthraquinone	0.1
82-68-8	Quintozene {Pentachloronitrobenzene}	1.0
84-66-2	Diethyl phthalate	1.0
84-74-2	Dibutyl phthalate	1.0
85-44-9	Phthalic anhydride	1.0
85-68-7	Butyl benzyl phthalate	1.0
86-30-6	N-Nitrosodiphenylamine	1.0
87-62-7	2,6-Xylidine	1.0
87-68-3	Hexachloro-1,3-butadiene	1.0
87-86-5	Pentachlorophenol {PCP}	1.0
88-06-2	2,4,6-Trichlorophenol	0.1
88-75-5	2-Nitrophenol	1.0
88-89-1	Picric acid	1.0
90-04-0	o-Anisidine	0.1
90-43-7	2-Phenylphenol	1.0
90-94-8	Michler's Ketone	0.1
91-08-7	Toluene-2,6-Diisocyanate	0.1
91-20-3	Naphthalene	1.0
91-22-5	Quinoline	1.0
91-59-8	beta-Napthylamine	0.1
91-94-1	3,3'-Dichlorobenzidine	0.1
92-52-4	Biphenyl	1.0
92-67-1	4-Aminobiphenyl	0.1
92-87-5	Benzidine	0.1
92-93-3	4-Nitrobiphenyl	0.1
94-36-0	Benzoyl Peroxide	1.0
94-59-7	Safrole	0.1
94-75-7	2,4-D {Acetic acid, (2,4 dichlorophenoxy)-}	1.0
95-47-6	o-Xylene	1.0
95-48-7	o-Cresol	1.0
95-50-1	1,2 Dichlorobenzene	1.0
95-53-4	o-Toluidine	0.1
95-63-6	1,2,4 Trimethylbenzene	1.0
95-80-7	2,4-Diaminotoluene	0.1
95-95-4	2,4,5-Trichlorophenol	1.0
96-09-3	Styrene oxide	0.1
96-12-8	1,2-Dibromo-3-chloropropane {DBCP}	0.1
96-33-3	Methyl acrylate	1.0
96-45-7	Ethylene thiourea	0.1
97-56-3	C.I. Solvent Yellow 3*	0.1
98-07-7	Benzoic trichloride {Benzotrichloride}	0.1
98-82-8	Cumene	1.0
98-87-3	Benzal chloride	1.0
98-88-4	Benzoyl chloride	1.0
98-95-3	Nitrobenzene	1.0
99-59-2	5-Nitro-o-anisidine	0.1
99-65-0	m-Dinitrobenzene	1.0
100-02-7	4-Nitrophenol	1.0
100-25-4	p-Dinitrobenzene	1.0
100-41-4	Ethylbenzene	1.0
100-42-5	Styrene	0.1
100-44-7	Benzyl chloride	1.0
100-75-4	N-Nitrosopiperidine	0.1
101-14-4	4,4'-Methylenebis (2-chloroaniline) {MBOCA}	0.1
101-61-1	4,4'-Methylenebis(N,N-dimethyl) benzenamine	0.1
101-68-8	Methylenebis (phenylisocyanate) {MBI}	1.0
101-77-9	4,4'-Methylenedianiline	0.1

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CAS Number	Toxic Chemical Name	De Minimis Concentration
101-80-4	4,4'-Diaminodiphenyl ether	0.1
103-23-1	Bis(2-ethylhexyl) adipate	1.0
104-94-9	p-Anisidine	1.0
105-67-9	2,4-Dimethylphenol	1.0
106-42-3	p-Xylene	1.0
106-44-5	p-Cresol	1.0
106-46-7	1,4-Dichlorobenzene	0.1
106-50-3	p-Phenylenediamine	1.0
106-51-4	Quinone	1.0
106-88-7	1,2-Butylene oxide	1.0
106-89-8	Epichlorohydrin	0.1
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.1
106-99-0	1,3-Butadiene	0.1
107-02-8	Acrolein	1.0
107-05-1	Allyl chloride	1.0
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	0.1
107-13-1	Acrylonitrile	0.1
107-18-6	Allyl alcohol	1.0
107-21-1	Ethylene glycol	1.0
107-30-2	Chloromethyl methyl ether	0.1
108-05-4	Vinyl acetate	1.0
108-10-1	Methyl isobutyl ketone	1.0
108-31-6	Maleic anhydride	1.0
108-38-3	m-Xylene	1.0
108-39-4	m-Cresol	1.0
108-60-1	Bis(2-chloro-1-methylethyl) ether	1.0
108-88-3	Toluene	1.0
108-90-7	Chlorobenzene	1.0
108-95-2	Phenol	1.0
109-86-4	2-Methoxyethanol	1.0
110-80-5	2-Ethoxyethanol	1.0
110-82-7	Cyclohexane	1.0
110-86-1	Pyridine	1.0
111-42-2	Diethanolamine	1.0
111-44-4	Bis(2-chloroethyl) ether	1.0
114-26-1	Propoxur (Phenol, 2-(1-methylethoxy)-, methylcarbamate)	1.0
115-07-1	Propylene (Propene)	1.0
115-32-2	Dicofol (Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-)	1.0
117-79-3	2-Aminoanthraquinone	0.1
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	0.1
117-84-0	n-Dioctyl phthalate	1.0
118-74-1	Hexachlorobenzene	0.1
119-90-4	3,3'-Dimethoxybenzidine	0.1
119-93-7	3,3'-Dimethylbenzidine (o-Tolidine)	0.1
120-12-7	Anthracene	1.0
120-58-1	Isosafrole	1.0
120-71-8	p-Cresidine	0.1
120-80-9	Catechol	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0
120-83-2	2,4-Dichlorophenol	1.0
121-14-2	2,4-Dinitrotoluene	1.0
121-69-7	N,N-Dimethylaniline	1.0
122-66-7	1,2-Diphenylhydrazine (Hydrazobenzene)	0.1
123-31-9	Hydroquinone	1.0
123-38-6	Propionaldehyde	1.0
123-72-8	Butyraldehyde	1.0
123-91-1	1,4-Dioxane	0.1
124-73-2	Dibromotetrafluoroethane (Halon 2402)	1.0
126-72-7	Tris(2,3-dibromopropyl) phosphate	0.1
126-99-8	Chloroprene	1.0
127-18-4	Tetrachloroethylene (Perchloroethylene)	0.1
128-66-5	C.I. Vat Yellow 4*	1.0
131-11-3	Dimethyl phthalate	1.0
132-64-9	Dibenzofuran	1.0
133-06-2	Captan (1H-Isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-)	1.0
133-90-4	Chloramben (Benzoic acid, 3-amino-2,5-dichloro-)	1.0
134-29-2	o-Anisidine hydrochloride	0.1
134-32-7	alpha-Naphthylamine	0.1
135-20-6	Cupferron (Benzeneamine, N-hydroxy-N-nitroso,ammonium salt)	0.1
139-13-9	Nitrilotriacetic acid	0.1
139-65-1	4,4'-Thiodianiline	0.1
140-88-5	Ethyl acrylate	0.1
141-32-2	Butyl acrylate	1.0
151-56-4	Ethyleneimine (Aziridine)	0.1
156-10-5	p-Nitrosodiphenylamine	0.1
156-62-7	Calcium cyanamide	1.0
302-01-2	Hydrazine	0.1

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CAS Number	Toxic Chemical Name	De Minimis Concentration
309-00-2	Aldrin {1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-(1.alpha., 4.alpha.,4a.beta.,5.alpha., 8.alpha.,8a.beta.)-}	1.0
334-88-3	Diazomethane	1.0
353-59-3	Bromochlorodifluoromethane {Halon 1211}	1.0
463-58-1	Carbonyl sulfide	1.0
492-80-8	C.I. Solvent Yellow 34* {Aurimine}	0.1
505-60-2	Mustard gas {Ethane,1,1'-thiobis[2-chloro-}	0.1
510-15-6	Chlorobenzilate {Benzeneacetic acid,4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-,ethyl ester}	1.0
528-29-0	o-Dinitrobenzene	1.0
532-27-4	2-Chloroacetophenone	1.0
534-52-1	4,6-Dinitro-o-cresol	1.0
540-59-0	1,2-Dichloroethylene	1.0
541-41-3	Ethyl chloroformate	1.0
541-73-1	1,3-Dichlorobenzene	1.0
542-75-6	1,3-Dichloropropylene	0.1
542-88-1	Bis(chloromethyl) ether	0.1
569-64-2	C.I. Basic Green 4*	1.0
584-84-9	Toluene-2,4-diisocyanate	0.1
593-60-2	Vinyl bromide	0.1
606-20-2	2,6-Dinitrotoluene	1.0
615-05-4	2,4-Diaminoanisole	0.1
621-64-7	N-Nitrosodi-n-propylamine	0.1
624-83-9	Methyl isocyanate	1.0
636-21-5	o-Toluidine hydrochloride	0.1
680-31-9	Hexamethylphosphoramide	0.1
684-93-5	N-Nitroso-N-methylurea	0.1
759-73-9	N-Nitroso-N-ethylurea	0.1
842-07-9	C.I. Solvent Yellow 14*	0.1
924-16-3	N-Nitrosodi-n-butylamine	0.1
961-11-5	Tetrachlorvinphos {Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester}	1.0
989-38-8	C.I. Basic Red 1*	0.1
1120-71-4	Propane sultone	0.1
1163-19-5	Decabromodiphenyl oxide	1.0
1313-27-5	Molybdenum trioxide	1.0
1314-20-1	Thorium dioxide	1.0
1319-77-3	Cresol (mixed isomers)	1.0
1330-20-7	Xylene (mixed isomers)	1.0
1332-21-4	Asbestos (friable)	0.1
1335-87-1	Hexachloronaphthalene	1.0
1336-36-3	Polychlorinated biphenyls {PCBs}	0.1
1344-28-1	Aluminum oxide (fibrous forms)	0.1
1464-53-5	Diepoxybutane	0.1
1582-09-8	Trifluralin {Benzenamine, 2,6- dinitro-N,N-dipropyl-4-(trifluoromethyl)-}	1.0
1634-04-4	Methyl tert-butyl ether	1.0
1836-75-5	Nitrofen {Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-}	0.1
1897-45-6	Chlorothalonil {1,3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-}	1.0
1937-37-7	C.I. Direct Black 38*	0.1
2164-17-2	Fluometuron {Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-}	1.0
2234-13-1	Octachloronaphthalene	1.0
2303-16-4	Diallate {Carbamothioic acid, bis (1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester}	1.0
2602-46-2	C.I. Direct Blue 6*	0.1
2832-40-8	C.I. Disperse Yellow 3*	1.0
3118-97-6	C.I. Solvent Orange 7*	1.0
3761-53-3	C.I. Food Red 5*	0.1
4549-40-0	N-Nitrosomethylvinylamine	0.1
4680-78-8	C.I. Acid Green 3*	1.0
6484-52-2	Ammonium nitrate (solution)	1.0
7429-90-5	Aluminum (fume or dust)	1.0
7439-92-1	Lead	0.1
7439-96-5	Manganese	1.0
7439-97-6	Mercury	1.0
7440-02-0	Nickel	0.1
7440-22-4	Silver	1.0
7440-28-0	Thallium	1.0
7440-36-0	Antimony	1.0
7440-38-2	Arsenic	0.1
7440-39-3	Barium	1.0
7440-41-7	Beryllium	0.1
7440-43-9	Cadmium	0.1
7440-47-3	Chromium	0.1
7440-48-4	Cobalt	1.0
7440-50-8	Copper	1.0
7440-62-2	Vanadium (fume or dust)	1.0
7440-66-6	Zinc (fume or dust)	1.0

*C.I. means "Color Index"

CAS Number	Toxic Chemical Name	De Minimis Concentration
7550-45-0	Titanium tetrachloride	1.0
7647-01-0	Hydrochloric acid	1.0
7664-38-2	Phosphoric acid	1.0
7664-39-3	Hydrogen fluoride	1.0
7664-41-7	Ammonia	1.0
7664-93-9	Sulfuric acid	1.0
7697-37-2	Nitric acid	1.0
7723-14-0	Phosphorus (yellow or white)	1.0
7782-49-2	Selenium	1.0
7782-50-5	Chlorine	1.0
7783-20-2	Ammonium sulfate (solution)	1.0
8001-35-2	Toxaphene	0.1
8001-58-9	Creosote	0.1
10034-93-2	Hydrazine sulfate	0.1
10049-04-4	Chlorine dioxide	1.0
12122-67-7	Zineb (Carbamodithioic acid, 1,2-ethanediylbis-,zinc complex)	1.0
12427-38-2	Maneb (Carbamodithioic acid, 1,2-ethanediylbis-,manganese complex)	1.0
16071-86-6	C.I. Direct Brown 95*	0.1
16543-55-8	N-Nitrosonornicotine	0.1
20816-12-0	Osmium tetroxide	1.0
25321-14-6	Dinitrotoluene (mixed isomers)	1.0
25321-22-6	Dichlorobenzene (mixed isomers)	0.1
25376-45-8	Diaminotoluene (mixed isomers)	0.1
26471-62-5	Toluenediisocyanate (mixed isomers)	0.1
39156-41-7	2,4-Diaminoanisole sulfate	0.1

SECTION 313 TOXIC CHEMICAL CATEGORIES

Section 313 requires reporting on the toxic chemical categories listed below, in addition to the specific toxic chemicals listed above.

The metal compounds listed below, unless otherwise specified, are defined as including any unique chemical substance that contains the named metal (i.e., antimony, copper, etc.) as part of that chemical's structure.

Toxic chemical categories are subject to the 1 percent de minimis concentration unless the substance involved meets the definition of an OSHA carcinogen, which are subject to the 0.1 percent de minimis concentration. The de minimis concentration for each compound is provided in paranthesis.

Antimony Compounds - (Category Code N010) - Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure. (1.0)

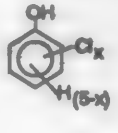
Arsenic Compounds - (Category Code N020) - Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure. (Inorganic compounds: 0.1; organic compounds: 1.0)

Barium Compounds - (Category Code N040) - Includes any unique chemical substance that contains barium as part of that chemical's infrastructure. (1.0)

Beryllium Compounds - (Category Code N050) - Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure. (Inorganic compounds: 0.1; organic compounds: 1.0)

Cadmium Compounds - (Category Code N078) - Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure. (Inorganic compounds: 0.1; organic compounds: 1.0)

Chlorophenols - (Category Code N084) - (0.1)



where x = 1 to 5

*C.I. means "Color Index"

Chromium Compounds - (Category Code N090) - Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure. (chromium VI compounds: 0.1; chromium III compounds: 1.0)

Cobalt Compounds - (Category Code N096) - Includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure. (1.0)

Copper Compounds - (Category Code N100) - Includes any unique chemical substance that contains copper as part of that chemical's infrastructure. (1.0)

This category does not include:

Chemical	CAS Number
C.I. Pigment Blue 15	147-14-8
C.I. Pigment Green 7	1328-53-6
C.I. Pigment Green 36	14302-13-7

Cyanide Compounds - (Category Code N106) - $X^+ CN^-$ where $X = H^+$ or any other group where a formal dissociation may occur. For example, KCN or $Ca(CN)_2$. (1.0)

Glycol Ethers - (Category Code N230) - Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol. (1.0)

$R\text{-}(OCH_2CH_2)n\text{-}OR'$
Where n = 1,2,or 3

R = alkyl or aryl groups

R'= R, H, or groups which, when removed, yield glycol ethers with the structure:
$R\text{-}(OCH_2CH_2)n\text{-}OH$

Polymers are excluded from this category.

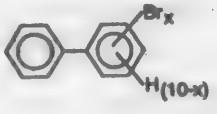
Lead Compounds - (Category Code N420) - Includes any unique chemical substance that contains lead as part of that chemical's infrastructure. (Inorganic compounds: 0.1; organic compounds: 1.0)

Manganese Compounds - (Category Code N450) - Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure (1.0)

Mercury Compounds - (Category Code N458) - Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure. (1.0)

Nickel Compounds - (Category Code N495) - Includes any unique chemical substance that contains nickel as part of that chemical's infrastructure. (0.1)

Polybrominated Biphenyls (PBBs) - (Category Code N575) - (0.1)



where x = 1 to 10

Selenium Compounds - (Category Code N725) - Includes any unique chemical substance that contains selenium as part of that chemical's infrastructure. (1.0)

Silver Compounds - (Category Code N740) - Includes any unique chemical substance that contains silver as part of that chemical's infrastructure. (1.0)

Thallium Compounds - (Category Code N760) - Includes any unique chemical substance that contains thallium as part of that chemical's infrastructure. (1.0)

Zinc Compounds - (Category Code N982) - Includes any unique chemical substance that contains zinc as part of that chemical's infrastructure. (1.0)

*C.I. means "Color Index"

APPENDIX A. BLANK TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM R

Public Reporting Burden

Public reporting burden for this collection of information is estimated to average 43 hours per response, includng time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch (PM-223), U.S. EPA, 401 M Street, SW, Washington, D.C. 20460, Attention: TRI Burden, and to the Office of Information and Regulatory Affairs, Office of Management and Budget Paperwork Reduction Project (2070-0093), Washington, D.C. 20603.

(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires: 11/92

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FORM R TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act

TRI FACILITY ID NUMBER

Toxic Chemical, Category, or Generic Name

WHERE TO SEND COMPLETED FORMS:

1. EPCRA Reporting Center
P.O. Box 23779
Washington, DC 20026-3779
ATTN: TOXIC CHEMICAL RELEASE INVENTORY

2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

Enter "X" here if this is a revision

For EPA use only

IMPORTANT: See instructions to determine when "Not Applicable (NA)" boxes should be checked.

PART I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR

19 ____

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 3 trade secret?

☐ Yes (Answer question 2.2; Attach substantiation forms) ☐ No (Do not answer 2.2; Go to Section 3)

2.2 If yes in 2.1, is this copy: ☐ Sanitized ☐ Unsanitized

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official

Signature

Date Signed

SECTION 4. FACILITY IDENTIFICATION

4.1

Facility or Establishment Name

TRI Facility ID Number

Street Address

City

County

State

Zip Code

Mailing Address (if different from street address)

City

State

Zip Code

PUT LABEL HERE

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EPA FORM R

PART I. FACILITY IDENTIFICATION INFORMATION (CONTINUED)

TRI FACILITY ID NUMBER
Toxic Chemical, Category, or Generic Name

SECTION 4. FACILITY IDENTIFICATION (Continued)

4.2	This report contains information for: (Important: check only one)	a. ☐ An entire facility		b. ☐ Part of a facility			
4.3	Technical Contact	Name				Telephone Number (include area code)	
4.4	Public Contact	Name				Telephone Number (include area code)	
4.5	SIC Code (4-digit)	a.	b.	c.	d.	e.	f.
4.6	Latitude and Longitude	Latitude			Longitude		
		Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

4.7	Dun & Bradstreet Number(s) (9 digits)	a. b.
4.8	EPA Identification Number(s) (RCRA I.D. No.) (12 characters)	a. b.
4.9	Facility NPDES Permit Number(s) (9 characters)	a. b.
4.10	Underground Injection Well Code (UIC) I.D. Number(s) (12 digits)	a. b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company ☐ NA	
5.2	Parent Company's Dun & Bradstreet Number ☐ NA	(9 digits)

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EPA FORM R

PART II. CHEMICAL-SPECIFIC INFORMATION

TRI FACILITY ID NUMBER
Toxic Chemical, Category, or Generic Name

SECTION 1. TOXIC CHEMICAL IDENTITY (Important: DO NOT complete this section if you complete Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete **only** if Part I, Section 2.1 is checked "yes." Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you complete Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY

(Important: Check all that apply.)

3.1	Manufacture the toxic chemical:	a. ☐ Produce b. ☐ Import	If produce or import: c. ☐ For on-site use/processing d. ☐ For sale/distribution e. ☐ As a byproduct f. ☐ As an impurity
3.2	Process the toxic chemical:	a. ☐ As a reactant b. ☐ As a formulation component	c. ☐ As an article component d. ☐ Repackaging
3.3	Otherwise use the toxic chemical:	a. ☐ As a chemical processing aid b. ☐ As a manufacturing aid	c. ☐ Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	☐ (Enter two-digit code from instruction package.)	

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EPA FORM R

PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI FACILITY ID NUMBER
Toxic Chemical, Category, or Generic Name

SECTION 5. RELEASES OF THE TOXIC CHEMICAL TO THE ENVIRONMENT ON-SITE

			A. Total Release (pounds/year) (enter range code from instructions or estimate)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	☐ NA			
5.2	Stack or point air emissions	☐ NA			
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
5.3.1	Stream or Water Body Name				
5.3.2	Stream or Water Body Name				
5.3.3	Stream or Water Body Name				
5.4	Underground injections on-site	☐ NA			
5.5	Releases to land on-site				
5.5.1	Landfill	☐ NA			
5.5.2	Land treatment/ application farming	☐ NA			
5.5.3	Surface Impoundment	☐ NA			
5.5.4	Other disposal	☐ NA			

☐ Check here only if additional Section 5.3 information is provided on page 5 of this form.

Range Codes: A = 1 - 10 pounds; B = 11 - 499 pounds; C = 500 - 999 pounds.

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EPA FORM R

PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI FACILITY ID NUMBER

Toxic Chemical, Category, or Generic Name

SECTION 5.3 ADDITIONAL INFORMATION ON RELEASES OF THE TOXIC CHEMICAL TO THE ENVIRONMENT ON-SITE

5.3 Discharges to receiving streams or water bodies (enter one name per box)	A. Total Release (pounds/year) (enter range code from instructions or estimate)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.3.__ Stream or Water Body Name			
5.3.__ Stream or Water Body Name			
5.3.__ Stream or Water Body Name			

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTW)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1 Total Transfers (pounds/year) (enter range code or estimate)	6.1.A.2 Basis of Estimate (enter code)

6.1.B POTW Name and Location Information

6.1.B.__ POTW Name		6.1.B.__ POTW Name	
Street Address		Street Address	
City	County	City	County
State	Zip Code	State	Zip Code

If additional pages of Part II, Sections 5.3 and/or 6.1 are attached, indicate the total number of pages in this box ☐ and indicate which Part II, Sections 5.3/6.1 page this is, here. ☐
(example: 1, 2, 3, etc.)

Range Codes: A = 1 - 10 pounds; B = 11 - 499 pounds; C = 500 - 999 pounds.

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PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI FACILITY ID NUMBER

Toxic Chemical, Category, or Generic Name

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2. ___ Off-site EPA Identification Number (RCRA ID No.)

Off-Site Location Name

Street Address

City | County

State | Zip Code | Is location under control of reporting facility or parent company? ☐ Yes ☐ No

A. Total Transfers (pounds/year) (enter range code or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2. ___ Off-site EPA Identification Number (RCRA ID No.)

Off-Site Location Name

Street Address

City | County

State | Zip Code | Is location under control of reporting facility or parent company? ☐ Yes ☐ No

A. Total Transfers (pounds/year) (enter range code or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

If additional pages of Part II, Section 6.2 are attached, indicate the total number of pages in this box ☐ and indicate which Part II, Section 6.2 page this is, here. ☐ (example: 1, 2, 3, etc.)

Range Codes: A = 1 - 10 pounds; B = 11 - 499 pounds; C = 500 - 999 pounds.

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PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI FACILITY ID NUMBER

Toxic Chemical, Category, or Generic Name

SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY

☐ Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	c. Range of Influent Concentration	d. Waste Treatment Efficiency Estimate	e. Based on Operating Data?
7A.1a	7A.1b 1 2 3 4 5 6 7 8	7A.1c	7A.1d %	7A.1e Yes ☐ No ☐
7A.2a	7A.2b 1 2 3 4 5 6 7 8	7A.2c	7A.2d %	7A.2e Yes ☐ No ☐
7A.3a	7A.3b 1 2 3 4 5 6 7 8	7A.3c	7A.3d %	7A.3e Yes ☐ No ☐
7A.4a	7A.4b 1 2 3 4 5 6 7 8	7A.4c	7A.4d %	7A.4e Yes ☐ No ☐
7A.5a	7A.5b 1 2 3 4 5 6 7 8	7A.5c	7A.5d %	7A.5e Yes ☐ No ☐

If additional copies of page 7 are attached, indicate the total number of pages in this box ☐ and indicate which page 7 this is, here. ☐ (example: 1, 2, 3, etc.)

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PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI FACILITY ID NUMBER
Toxic Chemical, Category, or Generic Name

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

☐ **Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.**

Energy Recovery Methods [enter 3-character code(s)]

1 ☐ 2 ☐ 3 ☐ 4 ☐

SECTION 7C. ON-SITE RECYCLING PROCESSES

☐ **Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.**

Recycling Methods [enter 3-character code(s)]

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

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PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI FACILITY ID NUMBER
Chemical, Category, or Generic Name

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

	All quantity estimates can be reported using up to two significant figures.	Column A 1990 (pounds/year)	Column B 1991 (pounds/year)	Column C 1992 (pounds/year)	Column D 1993 (pounds/year)
8.1	Quantity released *				
8.2	Quantity used for energy recovery on-site				
8.3	Quantity used for energy recovery off-site				
8.4	Quantity recycled on-site				
8.5	Quantity recycled off-site				
8.6	Quantity treated on-site				
8.7	Quantity treated off-site				

8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)	
8.9	Production ratio or activity index	

8.10 Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1		a.	b.	c.
8.10.2		a.	b.	c.
8.10.3		a.	b.	c.
8.10.4		a.	b.	c.

		YES	NO
8.11	Is additional optional information on source reduction, recycling, or pollution control activities included with this report? (Check one box)	☐	☐

* Report releases pursuant to EPCRA Section 329(8) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment." Do not include any quantity treated on-site or off-site.

BILLING CODE 6560-50-C

EPA will print and mail the form and instructions directly to facilities which have reported previously under EPCRA section 313. Facilities reporting for the first time under EPCRA section 313 can request a copy of the form and instructions through their EPA Regional Office or the EPCRA Hotline listed under FOR FURTHER INFORMATION CONTACT.

Dated: May 22, 1992.

Linda J. Fisher,

Assistant Administrator for Prevention, Pesticides and Toxic Substances.

[FR Doc. 92-12529 Filed 5-26-92; 8:45 am]

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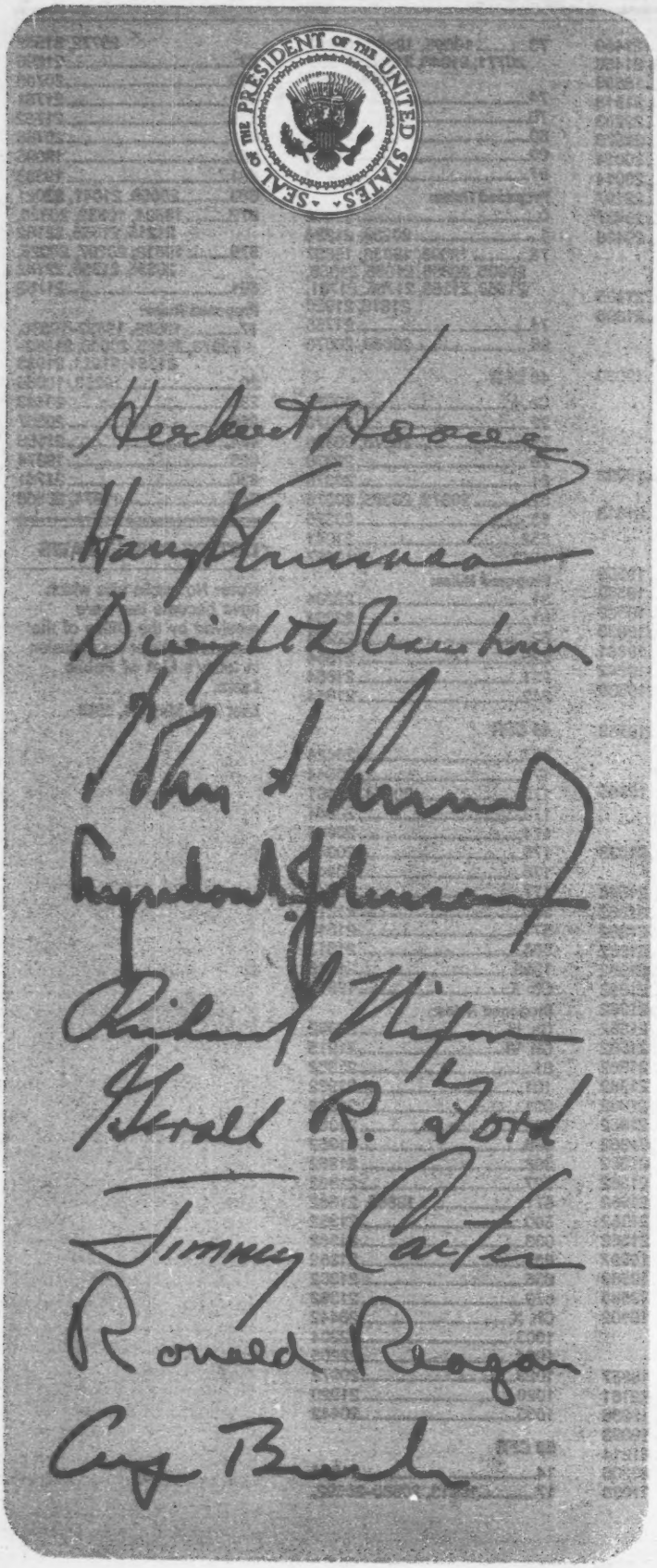

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